

THE MILLING WORLD

AND

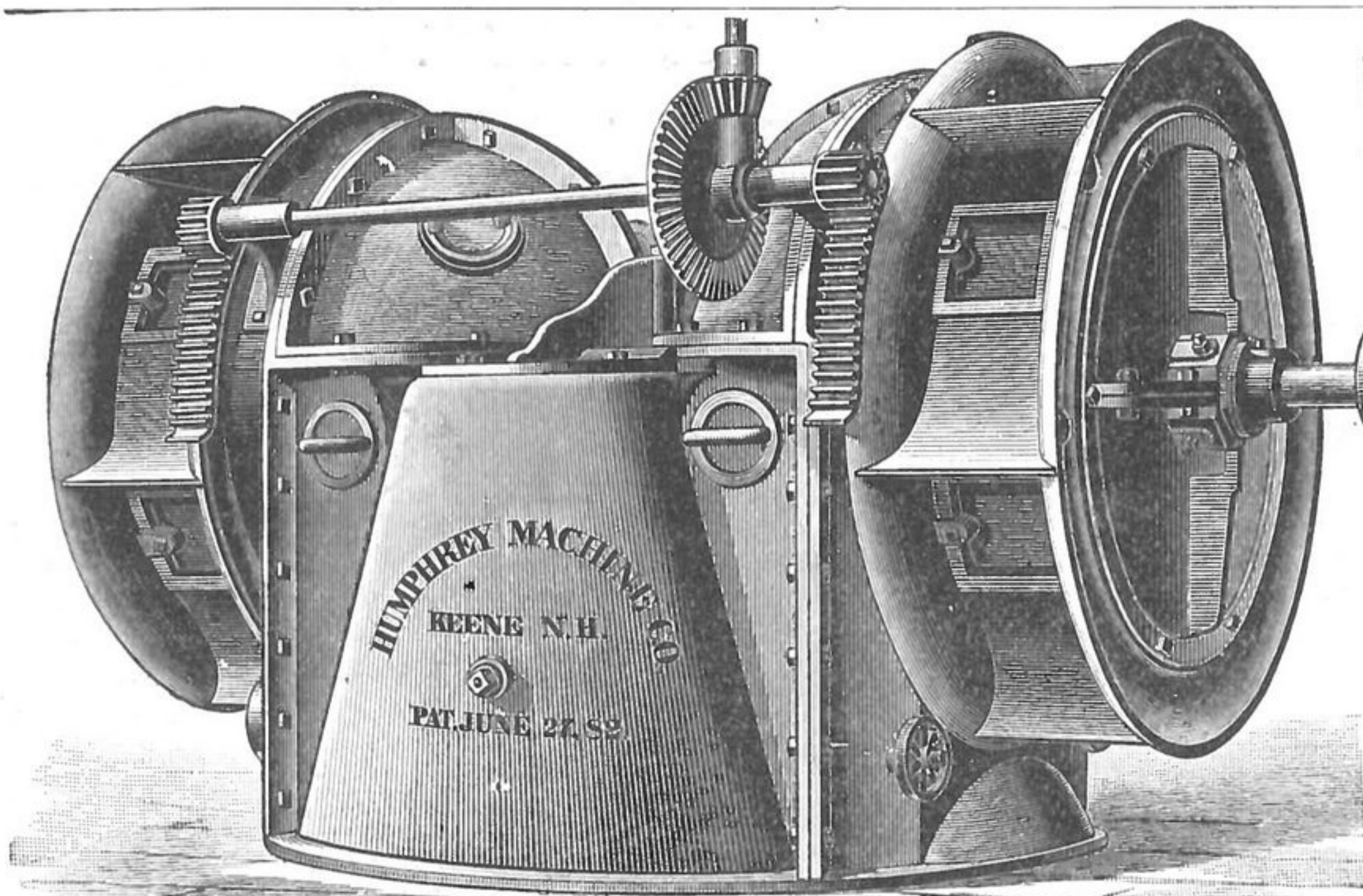
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XXIII. No. 3.

BUFFALO, N. Y., SEPTEMBER 15, 1890

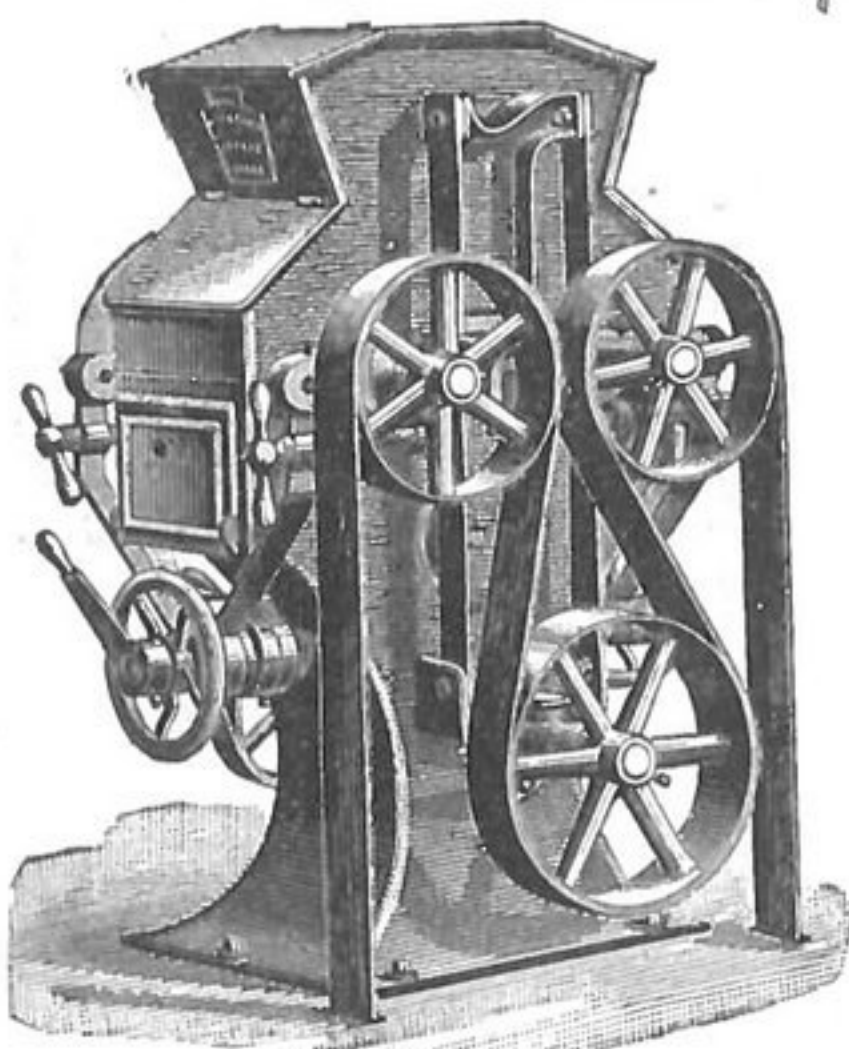
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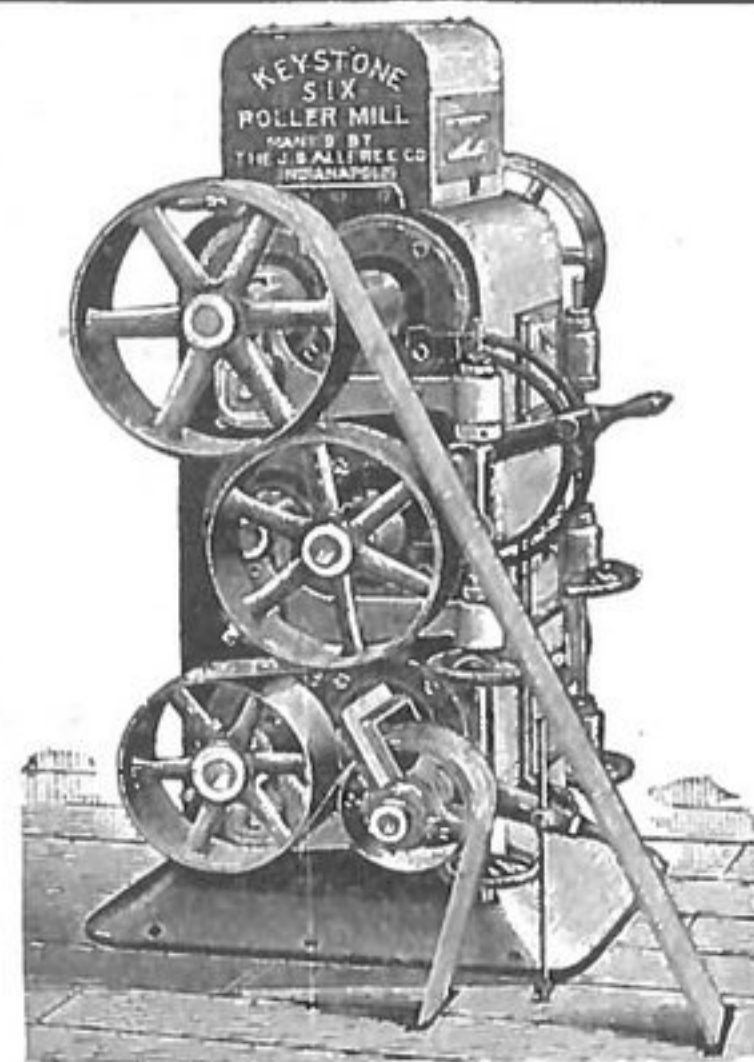
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Flour Mills. Corn Mills.

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"Keystone" 6-Roller Corn & Feed Mill.

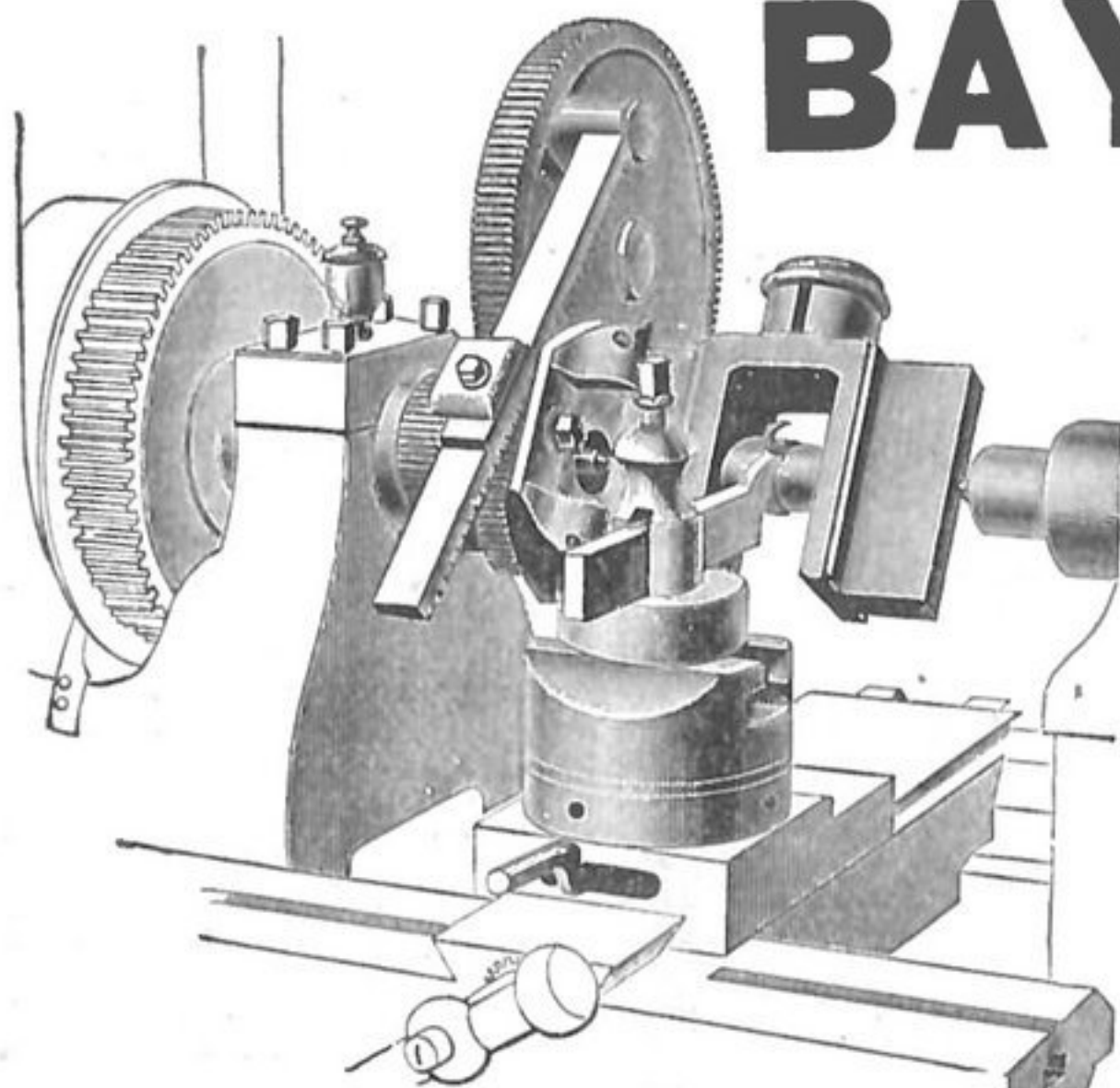
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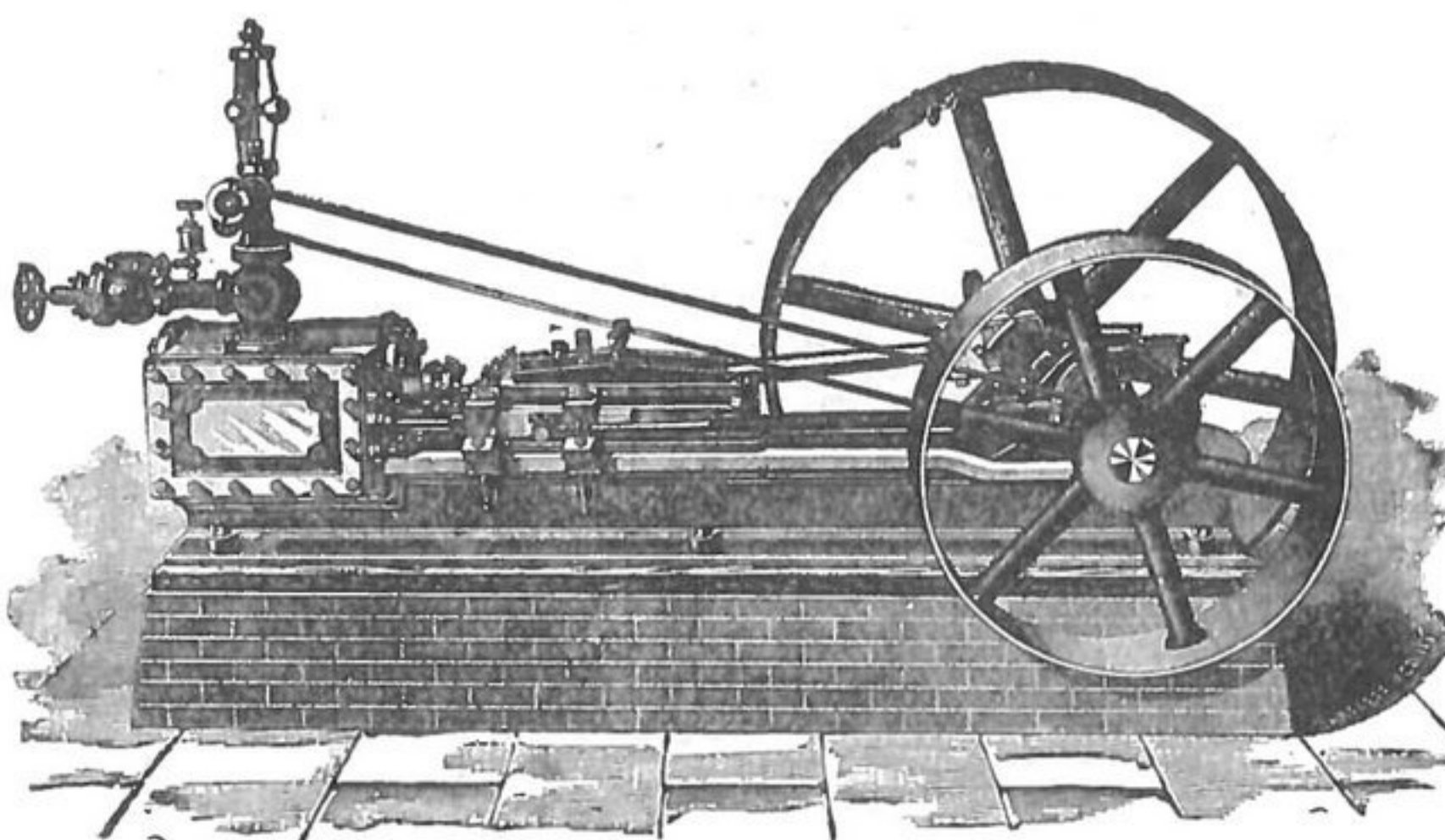
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—AND—
HOISTING MACHINES.

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The Case Roller Mills. Over 14,000 Pairs in Use.

PLEASE READ OUR DESCRIPTION OF THEM, EVERY STATEMENT OF WHICH IS ABSOLUTELY TRUE.

PLEASE READ WHAT MILL OWNERS SAY ABOUT THEM.



The accompanying cut is a correct illustration of our latest improved Four Roller Mill. For fine work, great durability, simplicity, and general excellence, they stand "head and shoulders" above all others.

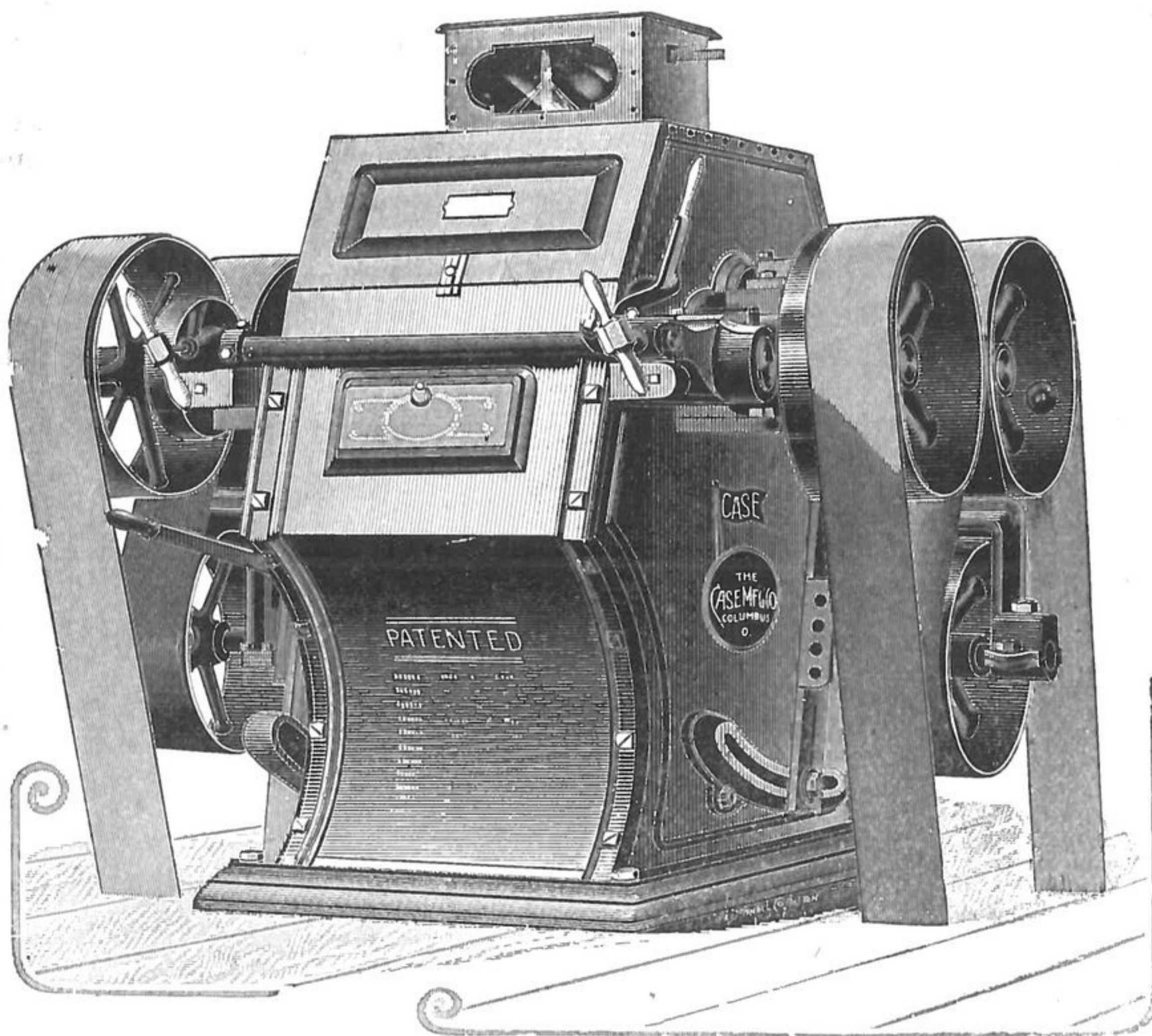
The frame is of iron with a heavy iron base.

The wood-work in top is of select cherry and black walnut, carefully shellacked and varnished.

The handles of adjusting screws and levers are finely nickel plated.

The joints are tight and dustless.

The adjustments easy, simple and perfect.



The roll bearings are wide and finely babbitted.

The belt drive is positive—no little short belts to slip.

The door for examining stock is a great convenience.

The arrangement for leveling rolls, simple and accurate.

The rolls can be thrown apart their entire length by one movement of the lever, and brought back again to original position, requiring no re-setting or experimenting.

Each machine is provided with our AUTOMATIC VIBRATING FEED, which requires no attention, and never fails to spread the feed the entire length of the rolls.



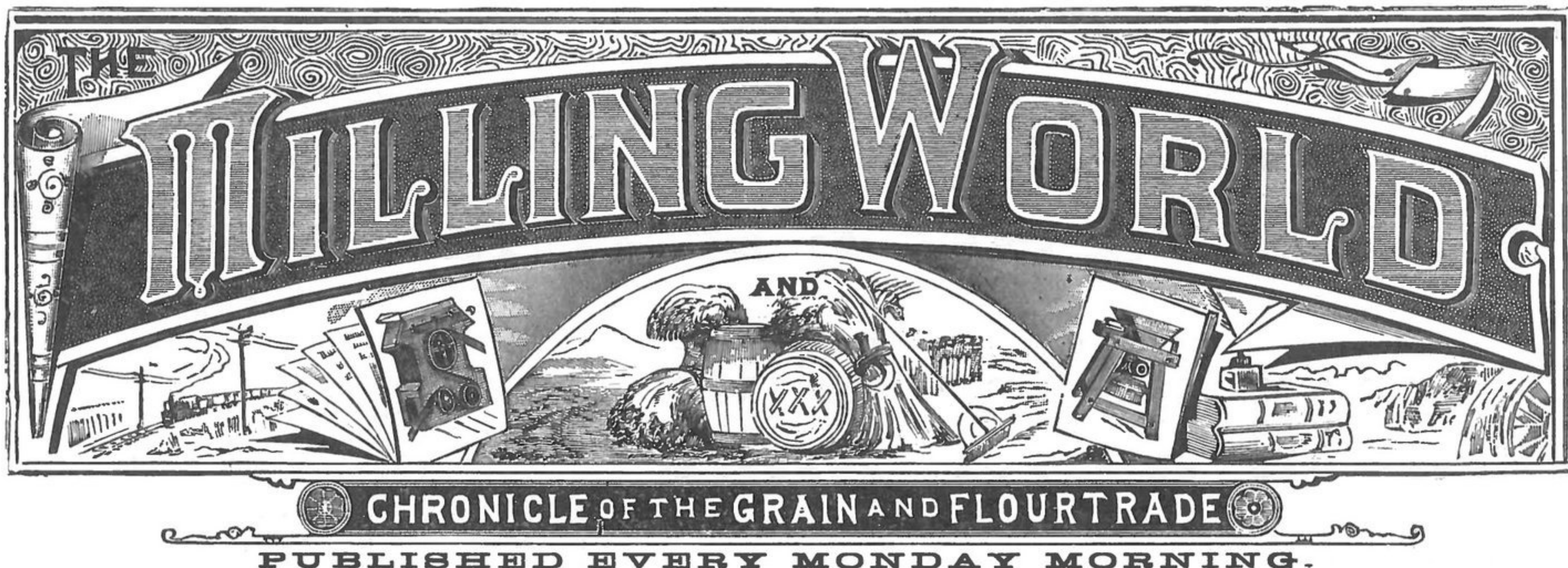
LISTEN! MICHIGAN MILLERS TALKING NOW.

CHARLOTTE, MICH., AUG. 5, 1890.

MESSRS. CASE MFG. CO., COLUMBUS, O.

Gentlemen: The mill is running fine. We are enjoying quite a fine little trade. Already have put over twenty tons of flour on the market here since we started the 7th of July, and it is giving elegant satisfaction. Every one who has seen our outfit pronounces it A 1, and the Case Automatic Feed can't be beat. In fact the Rolls are models of perfection. We are making a close finish and placing our goods alongside of the long system mills, carrying off the cake. We are highly pleased with the millwright work, and find your Messrs. McKen ie and Shough congenial gentlemen to do business with.

Very truly yours, PERKINS & MOON.



VOL. XXIII. No. 3.

BUFFALO, N. Y., SEPTEMBER 15, 1890.

\$1.50 PER YEAR.

WILLAMETTE Valley, Oregon, report yields of spring wheat of 18 to 25 bushels to the acre, and of spring wheat of 25 to 35 bushels to the acre. Yet the absurd "official average" will proclaim to the world that Oregon yields only 9 to 10 bushels of wheat to the acre!

THE fire-losses in the United States and Canada during August footed \$9,009,000. The milling and allied industries contributed about \$825,000 to the total. The August loss in 1889 was \$11,153,850, and in 1888 it was \$10,236,000. The total loss for the first eight months of 1890 was \$71,543,845, against \$86,460,350 in 1889 and \$88,025,320 in 1888.

GREAT reports are being sent out from Manitoba concerning the present wheat crop of that province. The boomers are reporting a yield of 30 to 40 bushels to the acre, which means a crop of 22,000,000 to 30,000,000 bushels of fine grain, all of the very highest grade. It is to be expected that the boomers will continue to repeat those figures, but it is to be feared that Manitoba has really met another serious disaster in the frost that fell late in August. On Tuesday the following dispatch was sent from Montreal, Canada, to Messrs. John Magor and Sons in New York: "Millers here have information from Manitoba that wheat is badly damaged, frosted, wilted and growing in stock." As this report comes from men who are directly interested in the Manitoba wheat crop, and whose business depends largely upon good Canadian wheat at low prices, it seems certain that the late frosts have seriously hurt the Manitoba wheat crop. If that province has a large crop of frosted, wilted, shrunken, shriveled, wrinkled, sprouted wheat, the outlook for Canadian millers is not cheerful. The boomers may as well tell the truth. They will gain nothing in the end by making statements that are not in accordance with the facts, and the truth will come out sooner or later. If Minnesota, North Dakota and South Dakota were injured at the same time, the truth will be told just as soon as the extent of the damage can be estimated, and Manitoba should fall in line with the truth-tellers. Disaster confessed will not drive out nor keep out settlers one-tenth as fast or as far as disaster concealed till concealment is no longer possible.

SUPERFICIAL writers on wheat-growing are just now asserting and reasserting that the United States will be compelled to import wheat grain in the year 1900. This assertion took its latest start at the recent convention of the National Association of British and Irish Millers, when Editor Rush of the London "Millers' Gazette" made use of the prediction. Americans should not be too ready to accept as confirmed truths all the wild predictions made in Europe concerning the United States. We have only to go back four or five years to find British writers jubilantly declaring that India's production of wheat would develop so rapidly that Great Britain would be "absolutely independent of the United States" for her wheat supply in 1890. Only three years ago, those same British writers discovered "a remarkable deterioration in American flour," asserting that it had lost its "strength" and was "merely respectable offal." During the

past six months those same writers have made the appalling discovery that American wheat flour is "adulterated" by the admixture of corn-meal. All these statements are disproved, and our credulous Yankee economists, who fake matters for the sensational dailies, should occupy the time between drinks to learn a few facts connected with American wheat culture and its capacity for development. There are very good reasons for refusing to believe that the United States will in 1900 be unable to produce enough wheat for home consumption. In the first place, there are millions of acres of good wheat lands in the United States that are not yet under culture. Even with the present exhausting method of cropping wheat, the additions to area alone would be sufficient to carry us far beyond 1900, should the next decade bring us an increase of 12,000,000 or even 15,000,000 in population. Again, the American practice of cropping wheat without using fertilizers or special tillage will be abandoned as land becomes more valuable, as population increases, and as the overtaking of supply by consumption enhances the value of wheat. A simple computation will suffice to illustrate the capacity of the United States. Conceive the wheat area to remain at its present figure, 38,000,000 acres in round numbers. Conceive 1900 to have arrived and the population large enough to consume the 450,000,000 bushels of wheat grown on the 38,000,000 acres of land. Now fertilization is generally adopted. The capacity of the soil is increased so as to raise the "average yield per acre of the country" one bushel. In the first year of fertilizing and careful culture that adds 38,000,000 bushels to the capacity of the country. The second year brings better results still and adds another bushel to the "average," implying an increase of 76,000,000 bushels. The third year adds another bushel to the acre's yield and brings the increase up to 114,000,000 bushels. These increases are small when compared with the increases achieved in France, and as the soil of the United States is superior to that of France, it is safe to predict that the "average" of 12 or less bushels to the acre in this country may be raised to 20 and more bushels, so that the present 38,000,000 acres under culture may be taken to represent a producing capacity of 750,000,000 to 1,000,000,000 bushels of wheat. At the rate of 5 bushels per head, it would require 200,000,000 inhabitants in the United States to consume all that the present acreage can produce under an enlightened system of culture. Go further, and conceive the wheat area extended from 38,000,000 to 50,000,000 acres, which is within the probabilities, and the average of 30 bushels to the acre will mean a wheat crop of 1,500,000,000 bushels. Density of population implies enforced intensity of cultivation, and when once the American deposits of fertilizers are brought into use, all crops will respond by raising their acreage. Natural soils in the valleys of Oregon and Washington have yielded 72 bushels of wheat to the acre. When less fertile soils are made to resemble those wonderful western soils, wheat-growing will assume a magnitude that would now seem incredible. Bulls and bears, foreign pessimists and native blockheads, and gamblers in grain the world over should move the "importing" date of the United States forward from 1900 to 9100.

The DAWSON ROLL WORKS CO.

FOUNDERS & MACHINISTS,

—MANUFACTURERS OF THE—

Dawson Roller Mills

—AND FURNISHERS OF—

CHILLED IRON ROLLS

WITH DAWSON PATENT CORRUGATION.

ALL STYLES OF FLOUR MILL ROLLS RE-GROUND AND
RE-CORRUGATED WITH ANY FORM OF CORRUGATION.

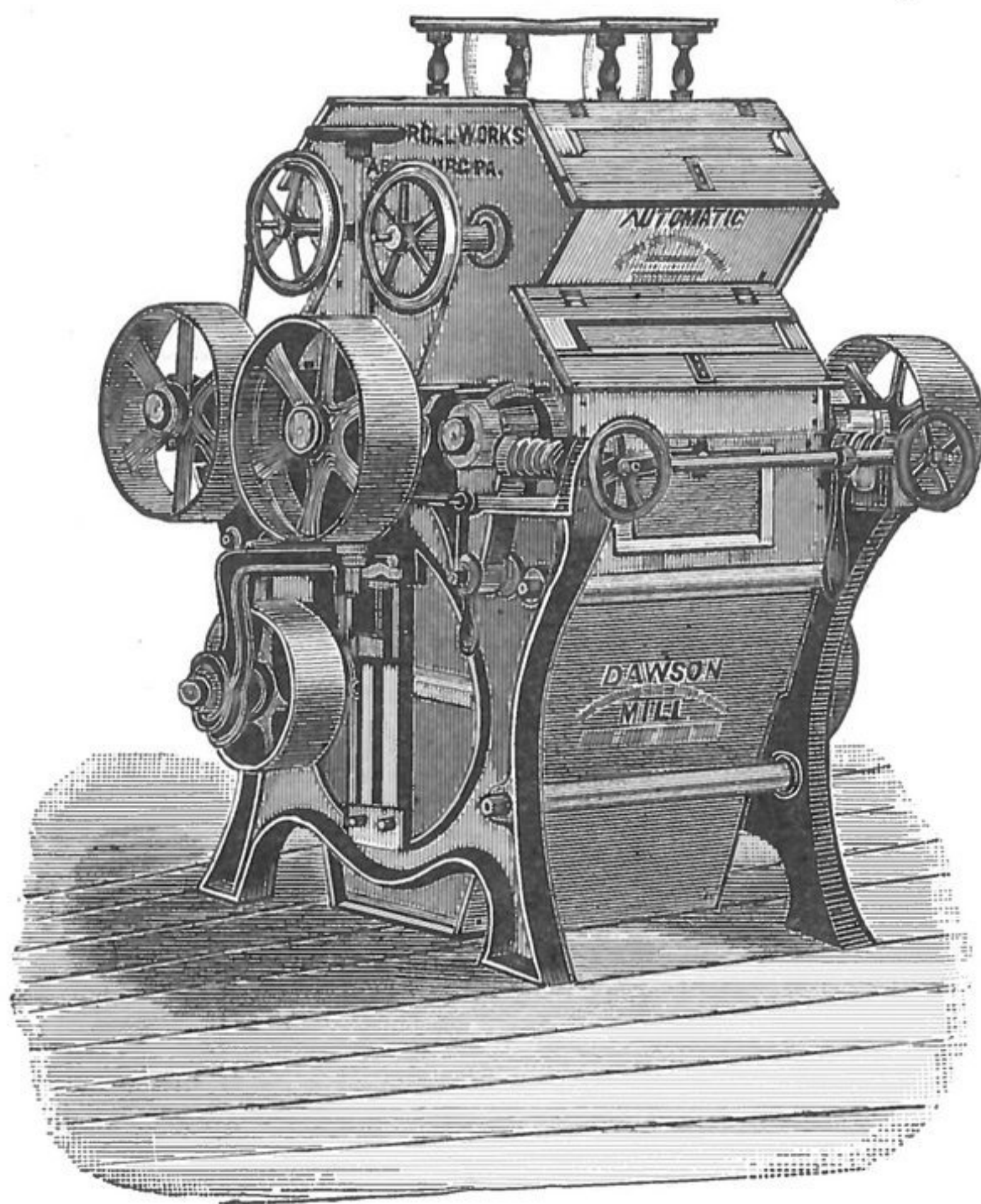
We have had large and extended experience in grinding and corrugating chilled rolls for milling, and have one of the largest and most improved plants in the country for this work, which enables us to meet the most exacting requirements of the trade promptly.

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DAWSON ROLL WORKS CO.

South and Short Streets,

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BEST STEEL SAFETY MADE FOR
\$35

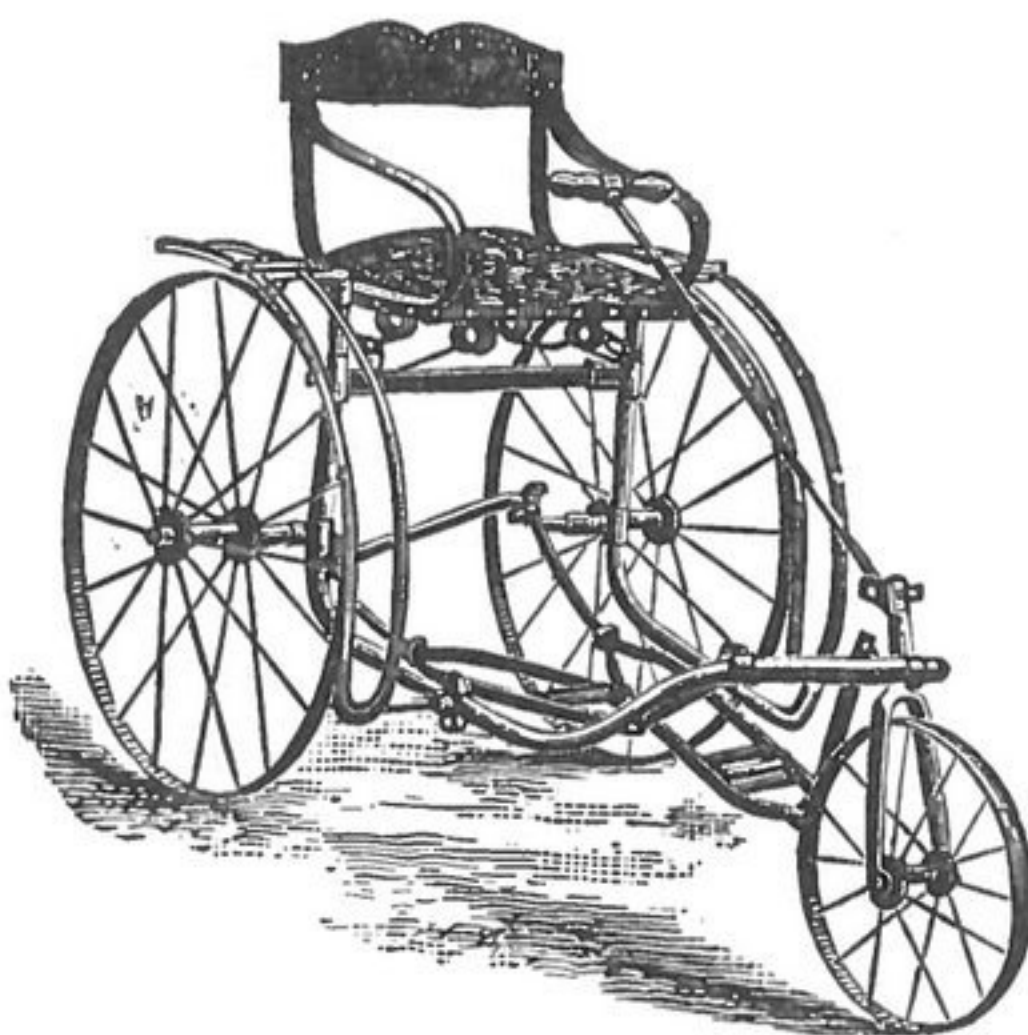
Easiest LADIES' Tricycle Known

Our Tricycles the Only Machine ever Recommended by Physicians for Ladies and Girls of a Delicate Constitution.

THE BUFFALO TRICYCLE CO.

Manufacturers of Ladies' and Girls' Tricycles, Ladies' and Boys' Safety Bicycles, Etc., Etc.

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Buffalo, N. Y.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS MC FAUL. JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in un-registered letter at sender's risk.

To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisement taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

SITUATION WANTED.

Head miller with over 20 years experience want to make a change this spring. Address, A. MILLER, 67 Weaver Alley Buffalo, N. Y. 4t

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office 10 cents must be added to pay postage.

WANTED, TO RENT.

A good Custom Mill, in a good grain section. Steam or water power. Address, MILLER, P. O. Box 170, Pocomoke City, Worcester County, Md. 252

FOR RENT.

Clinton Mills, at Black Rock, Buffalo, for rent on reasonable terms, recently repaired and put in good order. Apply to CHAS. DANIELS, over 811 Main Street, Buffalo, N. Y. 6tf

SITE FOR A STEAM FLOURING MILL.

A first-class site for a Steam Roller Flouring Mill at Grant, Ashland P. O., Mich. Correspondence solicited by the GRANT IMPROVEMENT ASSOCIATION, L. E. Mills, Cor. Sec'y. 2326

WANTED.

A company being formed with large capital to operate flouring mill in vicinity of Washington and Baltimore, require a practical miller and first-class manager, who can command ten to twenty-five thousand dollars. For particulars address, HON. CHAS. S. BAKER, House of Representatives, Washington, D. C. 2326

FOR SALE.

A cheap and desirable mill property, consisting of a Grist Mill, Saw Mill, two dwelling houses and all other necessary buildings. The mill has a good custom trade, nicely situated in the borough of New Buffalo, Perry County, Pa. For full particulars call on or address JEFFERSON WADE, New Buffalo, Pa. 232

FOR SALE.

Flour and saw-mill with or without farm of 38 acres. Four buhr mill, with machinery and building in most excellent condition. Buildings on farm good. Good run of custom. Can run by water 9 months, also have steam power. Terms easy. On Big Indian Creek, 1/4-mile from Crandall, on Air Line. Mrs. C. KRACKMAN, Crandall, Ind. 36

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
One 20-Inch Portable Mill.
One 18-Inch Double Gear Portable Mill.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

FOR SALE.

Rare chance, Grist, Saw, Planing Mill, Lumber and Coal Yard, doing good business. Growing village; 15 miles from Washington. Owner wishes to retire. Small capital needed. Terms easy. A. FREEMAN, Vienna, Va. 37

FOR SALE

Whole or part of a 25-barrel Flouring Mill, built entirely new from ground up. Equipped with latest machinery. Side track at mill door. Located in South Michigan. Big local and exchange trade. For further particulars address B. B., care of THE MILLING WORLD. 37

THE bears are taking an early whack at the wheat crop of 1891. Already it is gravely announced that the area sown to winter wheat this fall will be larger by several millions of acres than the area sown for the present crop, while in the spring-wheat region the increase in acreage will be at least 25 per cent. The bears seem to be satisfied that the crop of 1891 will be close onto 600,000,000 bushels. There's nothing like being early, not too early, but just (bear-ly!) early enough in crop matters.

LYING about the crop of wheat in the United States will soon end. The grain in the Northwest is cut and being threshed, and the voice of the thresher will soon supersede that of the liar, the lamb (bear) will lie down with (inside) the lion (bull), and the total spring and winter wheat crop of the country will pan out about 415,000,000 bushels, implying an exportable surplus of 33,000,000 bushels from the present crop, which will be swelled to 65,000,000 or 70,000,000 bushels by the reserves from last year's crops. Prices promise to remain firm during the year, as late reports from European wheat-growing countries indicate an aggregate yield considerably smaller than was looked for a month before harvesting.

THRESHER figures from Minnesota, North Dakota and South Dakota are coming in, and the yields of wheat are found to vary widely. For instance, at Crookston, the wheat threshed out 14 bushels of No. 1 Northern to the acre, while in the same county large tracts yielded 18 bushels of No. 1 hard. At St. Vincent the yield was 25 bushels to the acre. At Wabasha the yield ranged from 15 to 30 bushels to the acre. At Hector the yield was 15 bushels to the acre, and at Ashby it fell to 8 bushels of No. 1 and No. 2 Northern. Fergus Falls reported 18 to 20 bushels to the acre. Larimore, in North Dakota, reported 6 to 14 bushels, and numerous sections where total ruin was reported are turning out fair to large yields of fine grain. The general tenor of the reports seem to imply a good crop of fine wheat in the Northwest, after all.

THOSE Manitoba boomers, whose chief stock in trade appears to be the institution of invidious comparisons between that province and the neighboring States, Minnesota, North Dakota and South Dakota, would do well to reflect that their absurd figures and comparisons are likely to invite sensible men to wonder how so favored a province as Manitoba, growing from "30 bushels upward of wheat to the acre," manages to come out at the end of the season with a beggarly 9,000,000 or 10,000,000 bushel crop, while drouth-burned, blizzard-scourged, hail-pelted, grasshopper-chewed, chinch-bug-bitten, Hessian-fly-bored and generally-done-up Minnesota, North Dakota and South Dakota come sailing in with a 90,000,000 or 100,000,000 bushel crop. The comparison is invited by the big Manitoba talk of 30 bushels to the acre. North Dakota, or Minnesota, or South Dakota, may be a very worthless section of country, but so long as either of those three States grows a crop of wheat quite equal in quantity, and vastly superior in quality, to the entire crop of the Dominion, it seems very ridiculous for our Manitoba neighbors to go on as they do about the yield of wheat in the Northwest. Manitoba can grow fine wheat, and great quantities of it, providing the frost will cease falling in August, as it regularly does in that section. The States this side of the border certainly have the advantage of location, and the Manitobans will never gain a point in preliminary misrepresentation that will not entail upon them a loss of five points so soon as the immigrants find out how the meteorological currents set in that province. Once more, and ever, neighbors, tell the truth.

ROLLER MILLING IN SMALL MILLS.

Herewith is presented an abstract of an essay on "Roller Milling in Small Mills," read before the recent convention of the National Association of British and Irish Millers by Alph. Steiger. The paper is interesting to American flour-makers who operate small roller plants, as it summarizes the British views on the best methods of handling such plants. Mr. Steiger says:

"My task is to lay before you a system for small mills which, by a small expenditure for additional machinery, will give results at least equal if not superior to those obtained in large automatic mills. It is clear that now, as roller flour from large automatic mills of this country and foreign manufactured flour command the market, small mills can reconquer the lost field and stand the competition of large mills only by producing an equal article. To find the means to this end I must first of all lay the automatic system, as applied to large and small mills, on the dissecting table, examine their comparative advantages and disadvantages, show how the comparison is unfavorable for small mills, and further emphasize the facts that the cost of an automatic plant reduced to one sack (of 280 pounds) of flour per hour is very much greater in the case of a small mill than in that of a large mill, and that in small mills neither space nor the available power justifies the large expenditure for all the machinery in a complete and perfect automatic roller mill plant. I take it that most of the small mills, which are now under the necessity of adopting some sort of a roller plant, are water-mills, and I wish to draw your attention to the proper utilization of the water-power. If you calculate the annual profit made on the output in this time of one-horse power, and take into account the amount of power gained by replacing the old water-wheel with a good turbine from a responsible firm, which guarantees the power of the turbine, you will find that the investment of money in such a motor is one of the best investments that can be made, and that the cost of the turbine is recovered by the profit made out of the power saved. This calculation gives particularly striking result in the case of very low falls, from 20 inches to 60 inches, where very often the power can be doubled by the adoption of a turbine.

"As regards the subject of my paper, I would not have ventured, as an engineer, to bring it before you, had I not had practical experience as a miller and acquired that experience in mills on the system which I propose. A criticism of the automatic system has not yet been attempted, yet it is the criticism which gives us all the points which tend to favor the periodical system. That the automatic system is not perfect is clear from the fact that the opinions of millers, and also milling engineers, differ often widely on certain operations and the treatment of certain intermediate products, proving uncertainty on those points. In adapting the roller system to small powers and small mills the only mode followed hitherto has been to cut down plant and number of operations. I hope to show a better way. The question: Can such a small automatic plant give as good results as a large one? must be answered in the negative. The technical reason for this fact is found by comparing the diagrams of mills of different capacity, say of a 3-sack plant, a 7-sack plant, a 10-sack plant, and a 20-sack plant. You find not only a difference of the dimensions of the machines in proportion to the capacity, but also a difference in the number of machines, or, what is the same, in the number of operations. This difference is essential to note, for it is clear that in all mills grinding the same wheats the intermediate products are the same, differing only in quantity in proportion to the output of mills of different capacity. The 20-sack plant subdivides the process into a greater number of operations than the 3-sack plant or 7-sack plant, because of such a subdivision resulting in a better quality of the flour and a higher percentage of the same. Machines might be made large enough to deal with the intermediate products of the 20-sack plant in as few operations as are generally adopted in a 3-sack plant; it would simplify the process and lower the first cost of the plant, yet I do not think that a miller with his complete 20-sack plant would adopt such an idea, if he were to put up a second plant of the same capacity, but would prefer to lay out more money and have the plant complete.

"There are certain laws in roller-milling, as in every other manufacture, which must be strictly followed, and on the common-sense with which they are applied depends the success of the mill. Beginning with the breaks, you find generally 6 in large mills, 4 or 5 in mills of medium size, and 4, or even 3, breaks in small plants. Although the plant with 3 breaks may have exactly the same breaking length per sack of flour produced as the 6-break plant, the result will be different. Of course you make the bran clean, because you must get it clean, but if you examine the break-meal, from which you extract the best material, middlings and semolina, you will find an important difference; you will find more break flour, the middlings are mostly fine, and only a small percentage of coarse semolina is found. It is the first maxim of roller-milling to convert the grain into middlings and semolina for the purpose of purification previous to subjecting them to further operations, and to eliminate the bran while producing as little flour as possible. It is clear to me that this can be accomplished only by more frequent operations with as little pressure on the break-rolls as possible, yet it is just this point on which opinions differ very much. It is evident that by going close on the break-rolls, as you have to in a break plant with only a few breaks, you have the shearing action of the grooved rollers combined with the superfluous action of pressure. You crush by that pressure part of the semolina produced by the shearing action, and you crush that semolina without previous purification, and in contact with inferior products, such as bran. The flour which is produced by the shearing action of grooved rollers on wheat is of

inferior quality to the flour produced by crushing the semolina on those rolls, which itself would be of still better quality if produced from the same semolina after purification.

"It is principally claimed for the short-break system that the bran is just as clean and as broad as that finished on a six-break plant, and that by the adoption of a short system, so many hundred pounds are saved. I am quite willing to admit both, but the success of a mill depends, not on the clean bran only, but also on the superiority of the flour, and it is evident that the larger the percentage of pure middlings and semolina, the higher is the flour in quality, making a higher profit. But the short system proves that the number of grooves in break roller-mills is, within certain limits, not so important as is generally attributed to it. I emphasize this, as I must refer to it again. The less the pressure exerted on the break-rolls, the larger the percentage of middlings and coarse semolina; moreover these are obtained in a condition rendering the purification easier and more thorough. Recently even large mills have adopted the 4-break system. You will all remember the cry raised during the first years when roller-milling was introduced, that the crease-dirt deteriorates the stone flour, that the bad color of flour must be attributed to that crease-dirt, and that it must therefore be removed by all means. This cry seems to have been entirely forgotten, and those who then urged the importance of removing it let it now go with the flour. If the first-break flour from a complete roller plant, with 6-breaks, when it is from $\frac{1}{2}$ to $\frac{3}{4}$ per cent., is examined under the microscope, hardly any starch or gluten is found in it, but what is found is fibrous matter from the skin and clay or other mineral matter, both of which, however small their quantity, injure the quality of the flour. The test of the first-break flour therefore proves that the first break operation is essentially one of wheat-cleaning. It is admitted that none of the machines included in the wheat-cleaning system are capable of removing the crease-dirt, which justifies us fully in considering the first-break, with a somewhat severe action in scalping, as the finishing operation of wheat-cleaning. Many millers are already of this opinion. An objection to my argument is that the wheat must be graded first, and the first-break rolls do not split the wheat along the crease. Even if the grain is split transversely, part of the crease-dirt will be removed by using a reel or centrifugal as a scalper in this instance.

"The endeavors to invent a machine for splitting the grain along the crease are not yet discarded, which is a proof that the removal of the crease-dirt is held important by many millers. As long as we have not got such a machine as a wheat-cleaner, I consider the first-break an essential and even a valuable addition to the wheat-cleaning in mills on the low-grinding system. Speaking of the scalping of the breaks, it has lately become the 'fashion' to use fine covers. This seems to go hand-in-hand with a reduced number of breaks and may also have something to do with the exclusive use of sieve purifiers. The reason for the use of finer scalping covers is evidently to reduce the number of the reductions on smooth rolls, by doing part of their work on the break-rolls. This is in contradiction with another maxim of rational roller-milling, that middlings and semolina should be purified before being subjected to further reduction. If the number of operations is to be reduced at all, it ought to be done without affecting the quality of the flour.

"It can not be my task to describe or criticize any machine used in roller-milling; but in speaking of the various operations, I must refer to one adopted in some mills immediately after the scalpers, and that is the aspirator or pneumatic sorter. During the breaking down of the grain particles of pure bran are separated, which it is well to remove from the broken wheat before it goes to the next roll, to say nothing of the fact that a repeated contact of all intermediate products with a current of air is beneficial to the color and baking quality of the flour. I consider this aspiration after the scalpers, though not new, a very valuable operation, particularly where much soft wheat is used. Again, as to the scalping and redressing of the break-meal, the large mills have the advantage over small ones that they can dress the break-meal from some of the breaks separately, and take the inferior break-dust to the end of the reductions, while the middlings from the last breaks are sufficient in quantity to be purified on an extra purifier. All this would make a small automatic plant too costly.

"The next operation to consider, namely, the purification of middlings and semolina, is the most important in a flour-mill, and here again the advantage of a large automatic plant over a small one is apparent. The larger quantity of middlings in the large mill requires a larger purifying surface, but instead of grinding them into the same number of grades as in a small mill, and giving each grade a larger surface, the same purifying surface is maintained for each grade; but we make more grades, so that we can give each grade a suitable current of air. It is obvious that the results are superior. Very little attention has hitherto been paid to the re-purification of the second quality of middlings, even in large mills. The purifiers, and principally the sieve purifiers, have lately been brought to a high state of perfection, yet they do not prevent some good middlings from going to the second quality which ought to be, and can be, recovered by re-purification. The air current going through the sieve has to do two things, it has to remove the finished fluffy stuff, and to separate the pure middlings from those which have still bran adhering to them. We can only come near perfection in the combined work of the air-current by grading the middlings as much as possible. In Austrian and Hungarian mills, I believe, also in American mills, they have got a very elaborate purification plant for grading and re-grading, purifying the middlings and semolina. I do not for a moment say that such an elaborate system

should be adopted in English mills, for the requirements are altogether different here, but it shows us the importance attached to a proper and complete purification in mills, against which you have to compete. The re-purification does not necessarily require special machines, except perhaps a few elevators to bring the second quality of middlings from one purifier to another with suitable covers, or to the grader. In the re-purification we have no longer to deal with the fluffy stuff, as it has already been removed in the first passage through the purifier, and if we pass the second middlings over a sieve slightly coarser, we shall accomplish the re-purification very satisfactorily; otherwise, I believe, the aspiration of the breaks after scalping prepares the middlings for purification. The consequences of incomplete purification show themselves in the reduction of middlings and semolina, not only in the deterioration of the flour, but also in the necessity for more operations. The purer the material the quicker the reduction may be.

"Quite apart from this, large mills have more reductions than small ones so as to treat the various intermediate products separately and in a manner that suits their respective peculiarities. This separate treatment of all the intermediate products is necessary to high quality and percentage of flour, even if only one or two grades are made. It must be emphatically pointed out that the result in short-system mills suffers either in quality or percentage of flour in comparison with large and complete mills. The above comparison of large and small mills makes it evident that the advantages are all on the side of large mills, say 20-sack plants, and that the cost in labor and outlay of a small plant of one sack per hour, and of equal number of reductions, if attempted automatically, is very much higher than in the large plant. I come therefore to the conclusion that only the 'non-automatic' or 'periodical' system will enable small mills to produce the same results in percentage and quality as large ones. I prefer the name 'periodical milling' because it is more explicit than the expression 'non-automatic,' which expression might imply that it involves an amount of hand labor which would increase the working expenses of a mill. This is not the case, as you will presently see. The periodical system of milling is nothing else but the performance of a number of operations on the same machines, but at different times, or, in other words, the alternate use of a few machines for the treatment of the different products. This reduces the cost of the plant very considerably and adapts the mill to the variation of the available power, while I can increase or reduce the number of operations according to the demand of grades of flour. The number of machines would in the first instance depend on the average available power; the greater the power and the more regular, the nearer the mill would represent an automatic plant, and the more we could reduce the number of operations.

"There are, therefore, a good many ways to accomplish the work successfully in a periodical mill, and I must confine myself to giving you the idea of the working of such a mill with an assumed number of machines. The wheat is cleaned in the ordinary way and on the usual wheat-cleaning machines, but including the first-break with its scalper and aspirator. The large-sized wheat and the small-sized wheat would be cleaned separately, each going into its special bin for mixing after the cleaning operation. The first-break roll thus would be adjusted first for the large and afterwards for the small wheat. The small percentage of dunst and middlings obtained from the scalper would be taken into sacks or hoppers, from which they can be fed into the proper machine at a convenient time. This would constitute the first period, requiring perhaps 7-horse power in a plant turning out 300 sacks of flour per week, and would bring the wheat to the stage for second break. By storing the wheat, particularly soft wheats when split, the moisture evaporates and the separation of the flour from the bran becomes easier. The second period would consist in the granulation of the split wheat. But here comes the question: How many breaks are to be used in a periodical mill? If I maintain that 6 breaks give the best results, you will expect that I should suggest the use of 6 pairs of break rollers, each with a special grooving and separate scalper. This is not necessary; 3 or 4 sets of break rollers will do. The second break would be effected on the first-break rolls set a little closer. The number of flutes per inch is not of so much consequence as the proper adjustment of the rolls, exposing the kernels to the shearing action of the grooves with as little pressure as possible. A break roller mill with 9 or 10 flutes per inch will make as good a second break, if properly adjusted, as a pair of rollers with 12 or 14 flutes, and eventually even a good third break could be made on a first-break roller-mill. I may be contradicted on this point, but I doubt whether many millers with automatic mill plants have ever tried it, except they tried the short system temporarily, thereby crushing their best semolina. In many small mills on the periodical system several breaks are made one after the other on the same pair of rollers, and I have done it myself.

"I do not say that bran could be cleaned on a first-break roller-mill or a good first-break made on bran-rollers; there are limits to all things, and so also in the work of fluted rolls. Three pairs of fluted rolls there should be at least; if you have 4 pairs you will finish the granulation in the second period, making 5 breaks, including the first-break in the first period. If you make the experiment and let wheat through a pair of fluted rolls 3 times, each time adjusting the rolls according to the size of the kernels, you will obtain a better material for subsequent treatment than if you let the wheat through the same pair of rolls, adjusting the same at once as close as required for the third breaking operation; thus my assertion above would be confirmed. Of course, if a miller does not require to get the largest possible percentage of middlings and patent flour, he will confine his plant to 4 breaks and thus concentrate the first and second

periods into one continuous one, having this part entirely automatic, if he has power enough. If only 3 pairs of break rollers are in the mill the granulation would be extended over 3 periods. Over each roll there would be a hopper sufficiently large to hold the quantity for a few hours' working. Although each break roll would make 2 breaks, only one scalper for each pair of rolls is required, as the miller has it entirely in his own hand to treat the material subsequently by whatever machine is convenient to him. He has much more freedom in the use to his best advantage of all the machinery composing his plant than is the case in automatic mills. Aspiration after scalping, or practically purification of the breaks by a current of air, would be particularly advantageous in periodical mills, because the same aspirator could, after the completion of the granulation, be utilized, instead of special purifiers, for purifying the coarse semolina. Coarse semolina can very well be reduced on fluted rolls of fine pitch. It is obtained principally from the second and third breaks, corresponding in size to the meshes of No. 18 or 20 wire cover. The reduction of this semolina on the scratch-rolls after passing the aspirators produces very little flour, but of good quality; the fine middlings produced by this operation go to the purifiers, where they are again exposed to a current of air, which favors the good color and quality of the flour.

"Mr. Ashby, in his interesting paper on 'The Color of Flour,' read before this Association at its meeting in Paris last year, drew your attention to the effect of giving the wheat berry time to die and of allowing time to the middlings to dry and wither before subsequent operations. This process of natural drying requires much time, but is accelerated by storing, as I have proposed for the periodical system, the cleaned wheat after splitting, when the air has a better access to the inner parts of the grain, allowing the moisture to evaporate, and further by subjecting the broken wheat to aspiration after each scalper, and the repeated purification of middlings. For soft wheats this process of drying is of considerable importance for improving the quality of flour, and deserves the fullest attention of millers. Mr. Ashby says that that flour made at his mills at Croydon on which he can place most dependence is made on a small non-automatic plant. This, coming from one of the most experienced millers in this country, is sufficient proof of the value of storing intermediate products for the above purpose, an advantage which is obtainable only in non-automatic or periodical mills. The break-meal made in a periodical mill can either be scalped and re-dressed just when it comes from break scalpers, or carried to a bin and passed through dressers afterwards. This depends on the number of machines that can be put into the building. It is preferable to dress the break-meal immediately it is made, in order to have the middlings ready for the next operation. The four pairs of break-rolls, with scalpers and re-dressers, which are at work during the second period, would not require more than 8 or 10 horse-power at the maximum. The third period would include the reduction of the coarse semolina on the bran-roll, using it as a so-called scratch-roll, the grading of the middlings and the purification. The fine middlings produced from the large semolina on the scratch-roll go the same way and at the same time.

"As these machines would require only 4 or 5 horse-power, we can in most cases also include the reduction of the pure middlings on a pair of smooth rolls, and run these along with the purifiers. All the power can now be concentrated on the reduction of middlings and grinding of the dunst, either on chilled iron rolls, porcelain rolls or stones, or a combination system of stones and rollers. Keeping in view that millstones, owing to their severe treatment of the material during grinding, require absolutely pure feed to produce a pure and clean flour, it is best to reduce the middlings on smooth rolls first, eliminating all bran and germ, and finish all the dunst from the tail-sheets on the stones. In an automatic mill plant the use of millstones is inconvenient because of the frequent dressing, while in a periodical mill, where each machine has its short time of rest, there is always an opportunity to dress the stones without interfering with the work of the mill.

"It has been contended for a long time that the roller system is not suitable for soft wheats. There are, however, now many roller mills working more or less successfully on soft wheats. It has been established and is maintained by bakers that stone flour, particularly from soft wheats, bakes better than roller flour. The cause is, perhaps, difficult to explain, but it would seem preferable to use millstones on the pure stock, which would also tend to reduce the first cost of a mill plant where stones are already existing. French stones, which are perfectly suitable for grinding wheat, may not be suitable for grinding dunst. The latter requires stones with close grain, which can easily be adapted to the new work by making the land narrower and improving the ventilation. An open stone could not be made to do good work on dunst. If good stones are available in a mill, only 2 pairs of smooth rolls would be required for the reduction of middlings and tailings, each with a centrifugal or reel, and they could be used alternately on the different qualities of middlings. The rolls must of course be of sufficient size to do the work in a given time, so as to have them ready for other material to be treated during another period and before the products from a fresh supply of wheat reach the hoppers over these rolls.

"One difficulty in working a periodical mill would seem to exist in dressing different qualities of flour through the same machine at different times, but it will be observed that the dressing-machines gradually dress the flour from the head to the end of the plant, and the machines would only require cleaning out after the last reduction. Further, as we have at least as many dressing-machines as we make grades of flour, it is very

simple to connect all the machines so that we can dress each grade in its own centrifugal or reel. When we have thus arrived at the end of all the operations, and converted all the stock into flour, which is automatically carried to the flour-bins, there is the mixing of the flour from the different periods left to be done, for which automatic mixers would be used in a similar way to the automatic wheat-mixers below the wheat-bins, giving every facility to obtain a regular mixture.

"From the above it will be seen that a mill of this system can be made to produce the same high grades, and in the same percentage, as any large automatic mill with a few machines only, and also that the system is easily adapted to the variation of the available power. Even with the most reduced power we are able to drive some of the machinery at full speed, while, on the other hand, when we have plenty of power, we can run a fresh supply of wheat on the first periods while we are finishing the stock from the previous supply on the smooth rolls of stones. Waiting until the last particle has left the last machine while the full power is available would be waste of time, power and interest on capital invested in the machines. Now as regards the labor, it is also evident from the above that it is confined to the readjustment of the rolls when changing the periods, and the change of a few slides in the spouts. If the length of one period is one day, surely the work is not more than that in an automatic mill plant. In Continental mills on the periodical system the intermediate products are taken into sacks and fed into the corresponding machines by hand. This, of course, means a large amount of labor and requires more men; but if, as I propose, these intermediate products are stored in bins connected with the machines, that extra labor is avoided. There is hardly more skill required to work such a mill than is required in an automatic mill, but the foreman will often find the work more satisfactory, as he is not so much dependent on the machinery."

THE DOMINION MILLERS' ASSOCIATION.

The annual convention of the Dominion Millers' Association was held in Toronto on Tuesday and Wednesday, September 9th and 10th. About 60 millers were present, among them the following: Messrs. S. Plews, of Brantford; Whitelaw, Paris; N. Wenger, Ayton; H. A. Mulhern, Peterborough; Stark, Toronto; Norris, St. Catharines; M. Cahill, Mount Forest; J. Poehlmann, Shelburne; J. Galbraith, Allendale; J. Mayhew, Thamesville; F. Beach, Iroquois; E. S. Edmondson, Oshawa; M. M. Downe, Merritton; Hodd, Stratford; G. S. Baldwin, Aurora; Seth Cohoe, Tavistock; Adam Brown, Toronto Milling Co.; Hayne, Brigden; W. Hay, Ailsa Craig; Robson, Hamilton; S. Lukes, Bradford; R. B. Cooper, Belleville; Hamilton, Glen Huron; Sidney Smith, Port Sidney; W. Cummings, Lynn; J. McLaughlin, Toronto; Stark, Paisley, and others.

President Hay was absent, as was the vice-president also, and Mr. C. E. Whitelaw, of Paris, was called to the chair. Secretary S. Plews was present. The auditors chosen were E. Peplow, of Peterborough, and H. L. Rice, of St. Mary's. The exercises were interesting. Secretary Plews declared that the Listowel Local Association had called attention to the desirability of having a half-barrel package of uniform size. At present the bag package of Eastern millers is 98 pounds, while the Western millers allot 100 pounds to a bag. The subject would come up for discussion. Mr. Watts, of Brantford, he said, had given notice that he would move that the standard gauge of flour should be fixed twice a year, instead of annually as heretofore, and that this association should have a representative on the board. A large quantity of flour sold in the Lower Provinces was disposed of by grade.

The election of officers and the reading of the auditors' report was deferred until the evening session. A short discussion on the short weights in car-loads was the occasion for some very sharp remarks from those present, and the shippers will have to do better in the future if they wish to retain the trade of the "honest miller." It was the general testimony that full and proper weight was received from the elevators of the Grand Trunk and Canadian Pacific railways, but not from other elevators. Mr. Thos. Goldie, of Guelph, brought up the question of introducing a motion to the effect that a committee be appointed to report upon the proper winter wheats for propagation in the various provinces. The motion met with a favorable reception. The Minister of Agriculture will be asked to take an active interest in the introduction and production of the proper grades of wheat.

Mr. Charles Matthews gave notice of a resolution declaring in favor of an amendment in the law which governs the

appointment of those who fix the standards of the various grades of grain. Messrs. H. A. Mulhern, of Peterborough; Thomas Goldie, of Guelph; W. Cummings, of Lynn; J. G. Bechtel, of Burford, were appointed a committee by the acting president to investigate and report on the methods adopted in the various wheat-growing districts throughout the United States in the growing of winter wheat. The appointment of the committee was made on the motion of Mr. Goldie, of Guelph, seconded by Mr. Cooper, of Belleville. The session then adjourned till half-past seven o'clock in the evening.

THE EVENING SESSION.

The business was resumed in the evening at 7.30. Mr. Whitelaw again presiding. Mr. Adam Brown, M. P., Commissioner from Canada to the Jamaica Exhibition, was present, and in a short address he explained the object of his intended journey to Jamaica, and asked the millers to consider the matter and see that their interests were looked after. Mr. Brown was cordially thanked for his address, and the association will cordially co-operate in making the journey of the commissioner a success. The secretary's report was then read. It was an able review of the work of the association. The secretary, with Messrs. Saunby, Hunt, Peplow and Edmondson, waited on the Grand Trunk authorities in Montreal and succeeded in securing a grinding-in-transit arrangement, to apply to American wheat manufactured into flour for export out of the Dominion, and although a sudden advance in price of wheat in the United States prevents many of the Canadian millers from availing themselves of the privilege of using this rate, yet some of them have used it, and it has assisted them to some extent to pay running expenses until the Dominion harvest gives them supplies of wheat for their mills.

Nothing has been done regarding the appointment of a railway commission, but the matter is to be taken up. The "Trade Bulletin" is to be issued three or four times a week in future, if the members so decide. The secretary has succeeded in securing from Glasgow cable prices of flour, and also in making sales by cable. Satisfaction is expressed at the appointment of a flour-inspector for the Toronto district. The following statement, showing the wheat yield of Canada and its requirement for seed and food for 1887 and 1890, was submitted by the secretary:

1887.	Bushels.
Ontario, yield of wheat.....	18,600,000
Manitoba and North-West, yield of wheat.....	8,000,000
Other provinces, yield of wheat.....	1,000,000
Total.....	27,600,000
Required for seed, Ontario.....	1,875,000
Required for seed, Manitoba and North-West.....	875,000
Required for seed, other provinces.....	125,000
Bread requirements for the Dominion for say 5,000,- 000 of people, at $5\frac{1}{4}$ bushels per head.....	26,250,000
	29,125,000

Thus showing a shortage of 1,525,000 bushels.

The estimates for 1890 are:

	Bushels
Estimated yield for Ontario.....	24,300,000
Estimated yield for Manitoba and North-West...	15,000,000
Estimated yield for other provinces.....	1,000,000
Total.....	40,300,000
Ontario requires for seed.....	2,000,000
Manitoba and North-West require for seed.....	1,000,000
Other provinces require for seed.....	125,000
Required for food for the Dominion.....	26,850,000
Total.....	29,975,000

Thus showing a surplus for exportation of 10,325,000 bushels. The meeting then adjourned till 9.30 a. m. on Wednesday.

WEDNESDAY FORENOON SESSION.

The Wednesday session opened at 10 a. m., with Mr. Whitelaw presiding. The business was transacted rapidly. Mr. Charles Watts' motion to provide for the selection of a standard gage for flour, fixed every six months instead of every year, came up for consideration, and after considerable discussion was adopted. A resolution providing that 500 bushels of wheat constitute a car-load was adopted. Heretofore a car-load varied from 400 to 600 bushels, according

as the market was rising or falling. The question of a uniform size for bag packages caused much discussion. It was finally moved by Mr. N. Wenger, and seconded by Mr. J. Howson, "That it is inconvenient to have two sizes of bag packages for half-barrels in practice in the Dominion; therefore, be it resolved, that on and after the 1st of January, 1891, the bag of flour shall be 98 pounds." The resolution was adopted.

The election of officers ended the morning session. It resulted as follows: President, J. C. Hay, Listowel, re-elected; vice-president, W. H. Meldrum, Peterborough; secretary, David Plews, Brantford, re-elected; executive committee, officers of the association and presidents of the local associations.

WEDNESDAY AFTERNOON SESSION.

Secretary Plews presided at the afternoon session. A discussion on freight rates occupied the attention of the millers during the early part of the afternoon. It was felt that too much money had been spent on freights on wheat carried long distances to a mill that might have been supplied from contiguous warehouses. A proposition had been submitted from the Listowel association to the effect that the millers should receive their supplies from a central buyer at the nearest warehouse. Mr. Edmondson thought this scheme would not succeed, as millers who could buy advantageously outside this plan might be tempted to do so. The proposition of the Listowel association was favored and speculative milling discountenanced. How best to effect a saving in the matter of the expense of freight between grower and consumer was a question that occupied the attention of the meeting for some time. The western plan of dividing the States into districts and erecting in each district an elevator was found to be inapplicable in Canada. The Listowel proposition was accepted, and a discussion arose as to whether the central buyer should be paid by salary or commission.

It was then moved by Chas. B. Watts, Brantford, seconded by Mr. Hunt, London, that the chairman name a committee of five to draw up rules and regulations, and recommend a

man to buy and sell wheat to all the committee of this association, and this committee shall report to the executive committee by the 24th of September, and the executive committee shall call the association not later than October 10th to discuss and deal with the report of the sub-committee. The resolution was adopted.

The chairman named the following committee in accordance with the resolution: Messrs. Hay, of Listowel; Hunt, of London; Watts, of Brantford; Spink, of Toronto, and Flavelle, of Lindsay. The following committee was named to consider the best way of securing a remedy against railways and ship agents issueing through bills on flour without a guarantee of reasonable shipping despatch at seaboard: Messrs. Hunt, of London; Goldie, of Guelph, and Spink, of Toronto. The business before the association being concluded, the convention was adjourned.

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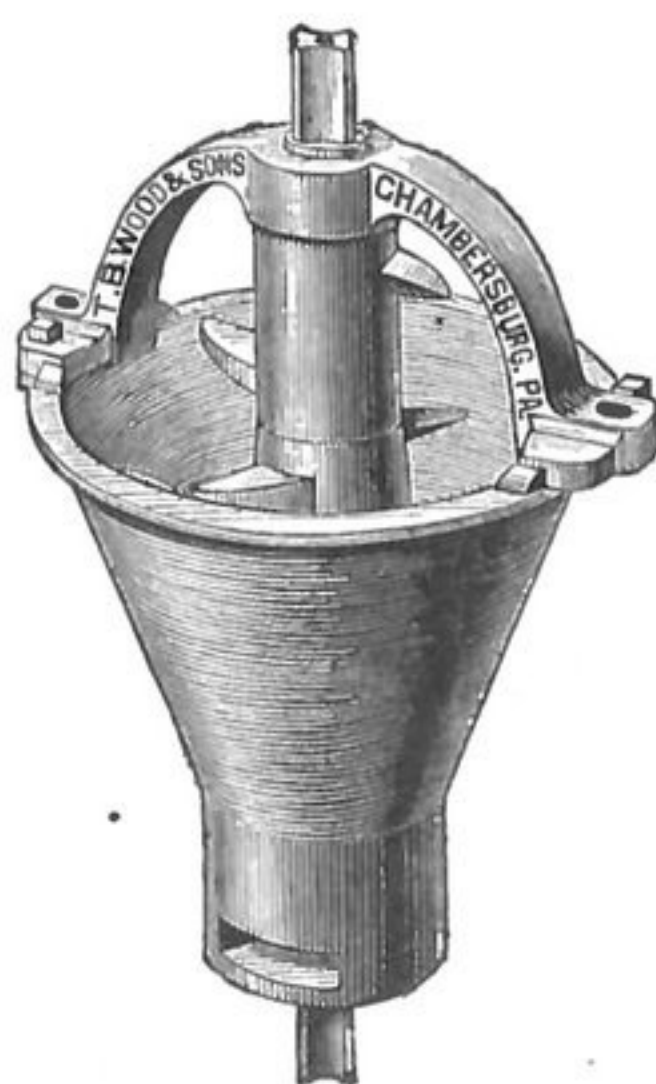
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Practical Notes

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GENERAL NOTES.

In 1850 the farmers owned three-fourths of the aggregate wealth of the United States; in 1860 about one-half; in 1880 about one-third, and in 1890 barely one-fourth. The diminishing proportion means that a great many important industries have been developed in the country since 1850, and that, while the farmers own vastly more in 1890 than they did in 1850, other great interests have added enormously to the national aggregate of wealth. The farmers still own the country.

POINTS IN MILLING.

REVOLUTIONS do not always imply noise and bluster. Milling has undergone a revolution in the United States within two years that seems to have been accomplished in what may be called silence. That revolution is the shortening of the milling systems. When it began, several years ago, there was some commotion over the innovation, but common-sense prevailed, and the question was left to be settled by time and practice. Three years ago, when the "drawing in" began, some manufacturers, orators, writers and editors pronounced the man who would advocate four breaks a mild lunatic. They pronounced the 3-break man a raving maniac and an immediate bankrupt. Now there is a 2-break school, and recently the end of the rope is reached in a "one-reduction" system, and not a manufacturer, or orator, or writer, or editor dares to rise and pronounce its originator, perfecter and operator a lunatic. The revolution has succeeded.

THE moral of the situation is plain. The fad of over-elaborateness implied so much needless expense for equipment and operation that a reaction was inevitable and necessary. By degrees it was discovered that in extra "long" systems one break knocked off made no perceptible difference in the grade of the flour. A second break was amputated, and the product was still good. The sequence was inevitable. Every flour-maker began to mistrust the value of the very "long" milling systems. Those who retained them did so under stress. Those who could get rid of them did so at once or as soon as they could.

It seems now to be admitted and settled that the "drawing-in" has not caused the predicted deterioration of American flour in general. According to market reports and results to millers, the general average of American flour is very high, and the bran is not "robbing the short-system millers" at all, as the opponents of the "drawing-in" prophesied. American processes are shortened to stay shortened.

ANOTHER curious result of this purely American revolution in milling is its effect on European milling. Even the Austro-Hungarian elaborate long-system millers have been studying the field in the United States, and this month they show the effect of their studies in the reduction of their 13 grades to 8 grades, a break of 5 breaks at one fell swoop. It remains to be seen whether they will be as successful in keeping up grades as the Americans have been under a shorter system. France, Germany and Great Britain are showing the influence of the American movement, and one of the most conspicuous and successful of American milling engineers is now engaged in fitting small mills in those countries on the American system. The revolution therefore includes all the important milling countries.

ALONG with this triumph of American milling ideas in Europe goes another triumph, that of the American grain-elevator. Russia and other countries are preparing to abandon their antiquated methods of handling grain, and by the time the Hungarians have reduced their present 8 grades of flour to 5 or 4, the American grain-elevator will be as common a feature of the European landscape as it now is of the American landscape. With all the American appliances and ideas in full operation in Europe, the average of European bread ought to rise. Travelers through Europe this season complain of the "horrible stuff called bread" served to them in German, French, Austrian, Belgian and British hotels. Fine bread is the exception, outside of Vienna, Paris and London, and the ordinary bread of the villages and rural districts they pronounce sour, nasty, flatulent and unpleasant to the eye, the nose and the palate. The few good shops in the few large cities that turn out exquisite bread only emphasize the general horribleness of average European breads. Probably better things are in store for the bread-eaters of Europe. Let American baking follow American milling ideas across the Atlantic, and all may be happy yet.

COTEEMPORARY COMMENT.

In Central California the farmers meditated building a new mill. The secretary of the Central Association, to break whose monopoly the mill was projected, came forward and offered the farmers one of the company's mills on terms that took their breath away with astonishment. The same thing happened in Indiana a few months ago. In fact, there is hardly a settled locality in the country where farmers and others can not obtain a plant already in operation. This is hardly a state of affairs that would exist in an occupation of such large profits as some farmers believe the millers are reaping. The fact is that milling, like everything else, has been down to "hard pan," and mill-owners doing business on a ridiculously low margin. A miller not long since informed us that the past year he had shipped thousands of barrels south on a net margin of from 3 to 5 cents a barrel, rather than allow his plant to lie idle and his trade to creep away. The building of new competing mills only makes a bad matter worse. Nearly everywhere there are mills enough and to spare. Let the farmers, who want a mill of their own, buy and not build.—Chicago "American Miller."

A NEW METHOD OF TREATING DISEASE.

HOSPITAL REMEDIES.

What are they? There is a new departure in the treatment of disease. It consists in the collection of the specifics used by noted specialists of Europe and America, and bringing them within the reach of all. For instance the treatment pursued by special physicians who treat indigestion, stomach and liver troubles only, was obtained and prepared. The treatment of other physicians, celebrated for curing catarrh was procured, and so on till these incomparable cures now include disease of the lungs, kidneys, female weakness, rheumatism and nervous debility.

This new method of "one remedy for one disease" must appeal to the common sense of all sufferers, many of whom have experienced the ill effects, and thoroughly realize the absurdity of the claims of Patent Medicines which are guaranteed to cure every ill out of a single bottle, and the use of which, as statistics prove, has ruined more stomachs than alcohol. A circular describing these new remedies is sent free on receipt of stamp to pay postage by Hospital Remedy Company, Toronto, Canada, sole proprietors.

THE BEST AND CHEAPEST CORN AND COB CRUSHER

IN THE WORLD.

All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

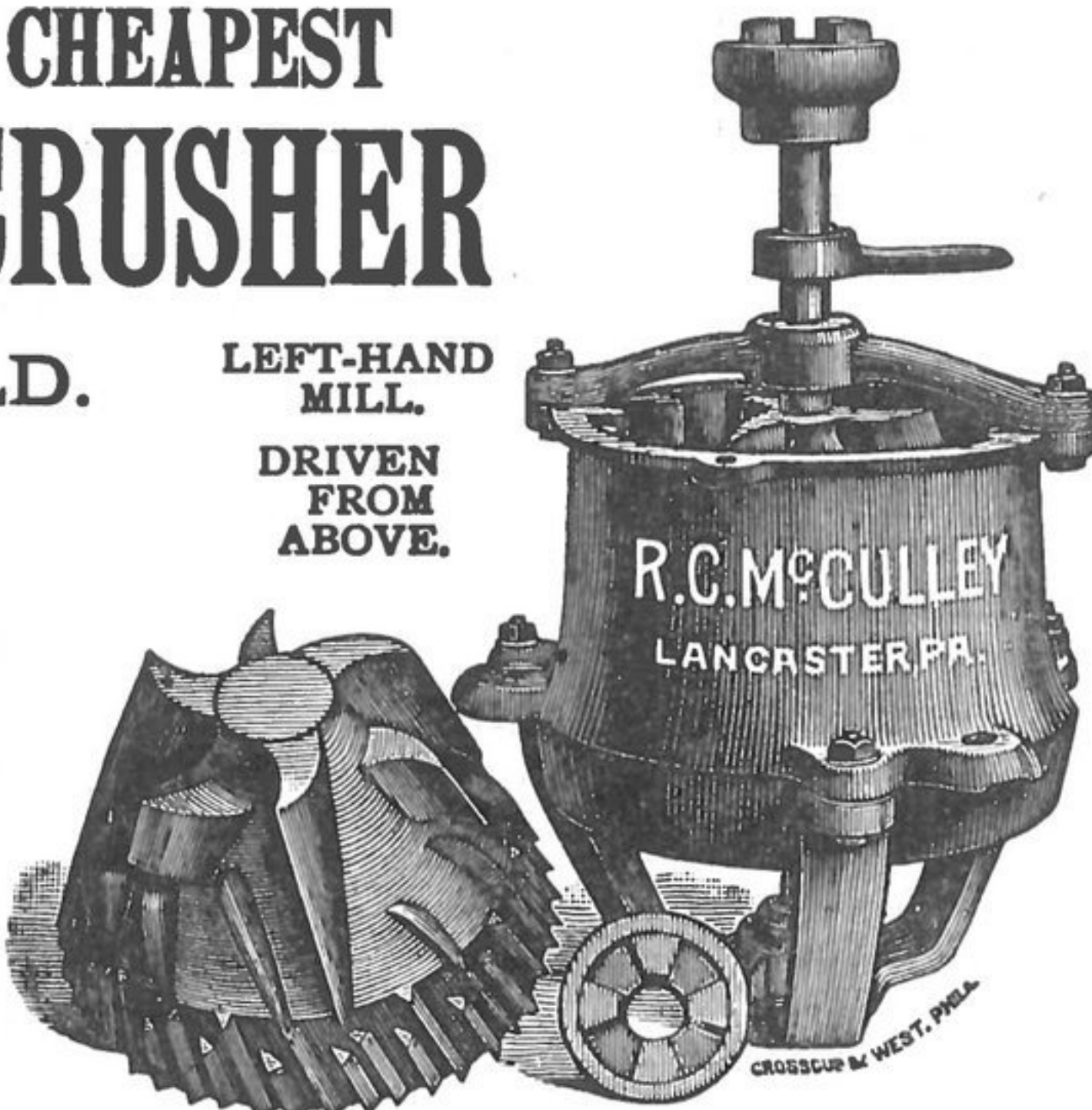
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R. C. McCULLEY, LANCASTER, PENN.

LEFT-HAND
MILL.

DRIVEN
FROM
ABOVE.

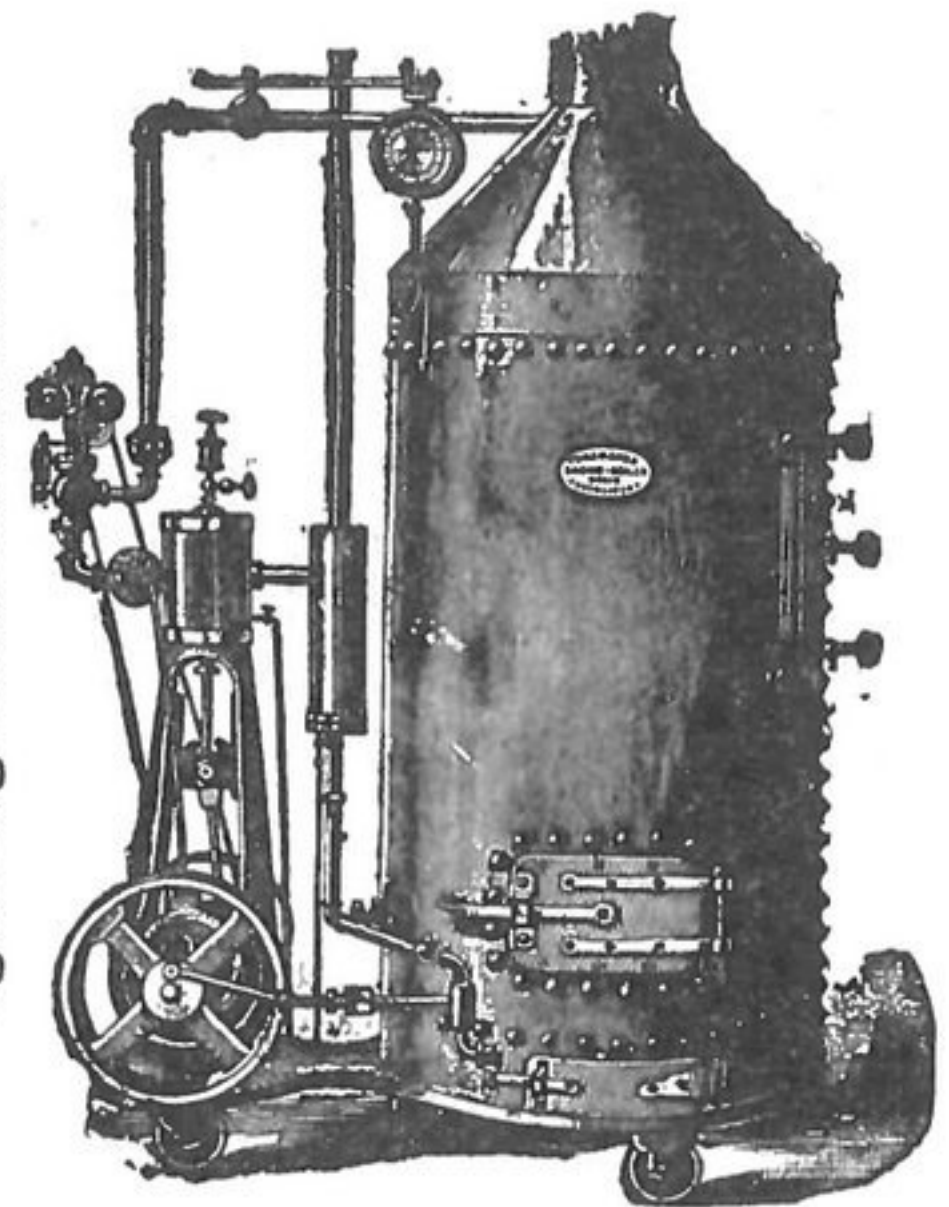
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A Large Assortment of Machinery.

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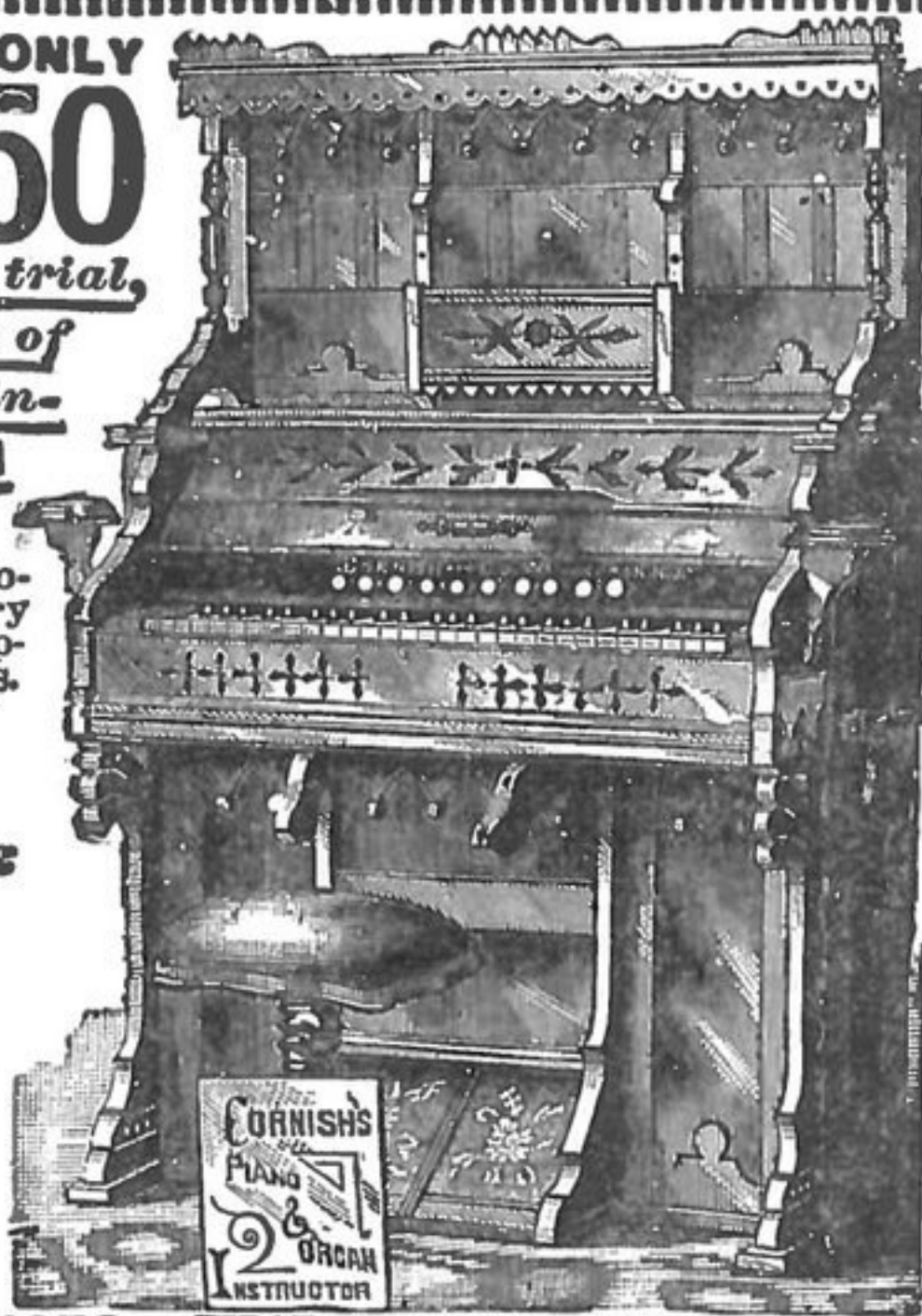
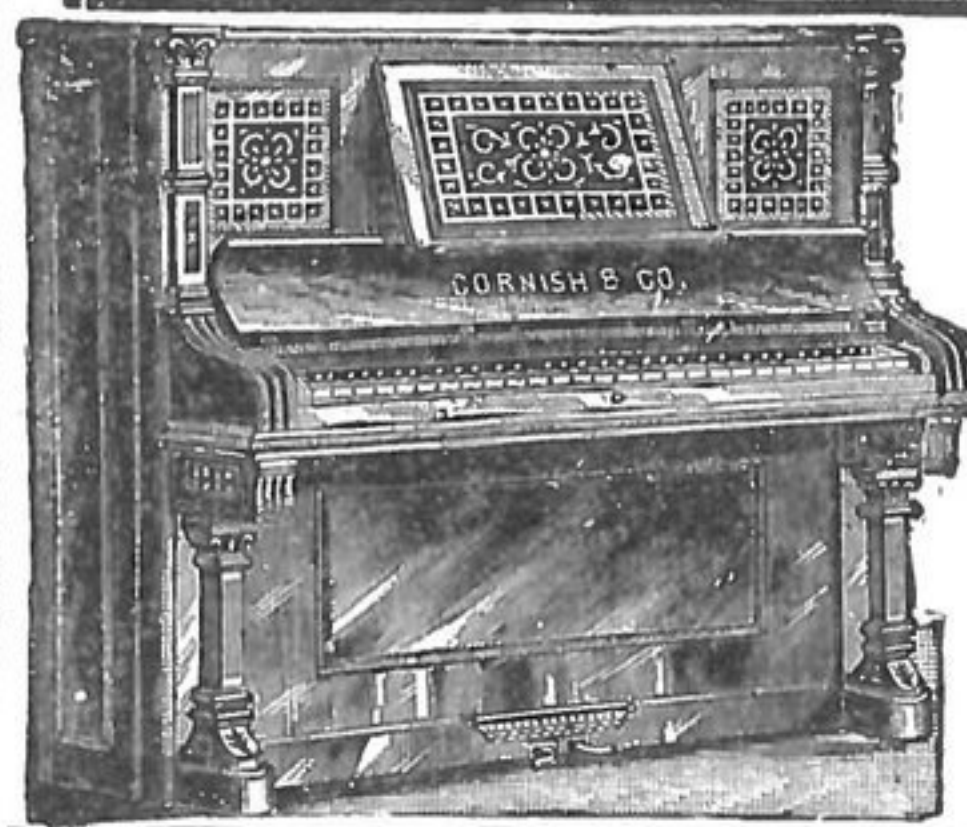
THE ONLY FIRM OF MANUFACTURERS IN AMERICA
selling direct to Consumer. From Factory to Family at Wholesale Rates on Terms to suit Purchaser.

\$75 ORGAN { EXACTLY LIKE THIS CUT } **FOR ONLY \$50**
\$15.00 CASH After ten days' trial, and the balance of price, \$35, to be paid in 7 monthly installments of \$5 each. OR IF CASH IS SENT WITH ORDER, WE WILL SPECIALLY ACCEPT \$45.00.

CORNISH'S Specially designed Cabinet Organ, Style "Cano-
pilletta," No. 10,000, contains 3 sets Orchestral toned Resonatory
Pipe Quality Reeds; 5 Octaves; 10 Solo Stops; 2 Octave Cou-
plers (Bass and Treble); 2 Knee Swells and all late improvements.
Dimensions.—65 in. high, 48 long, 21 wide.

WARRANTED FOR TEN LONG YEARS.
SOLID WALNUT CASE, HIGHLY FINISHED.
Handsome Stool and large Instruction Book, making
a Complete Musical Outfit.

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and Organ will be shipped at once on Ten Days'
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can return it and we will pay freight charges both
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INGTON, N. J., any Commercial Agency in the U. S., and thou-
sands of persons who for the last 20 years have purchased
instruments of our manufacture.

CORNISH'S GRAND, SQUARE PIANOS AND UPRIGHT

Magnificent New Designs, finest materials, whole-
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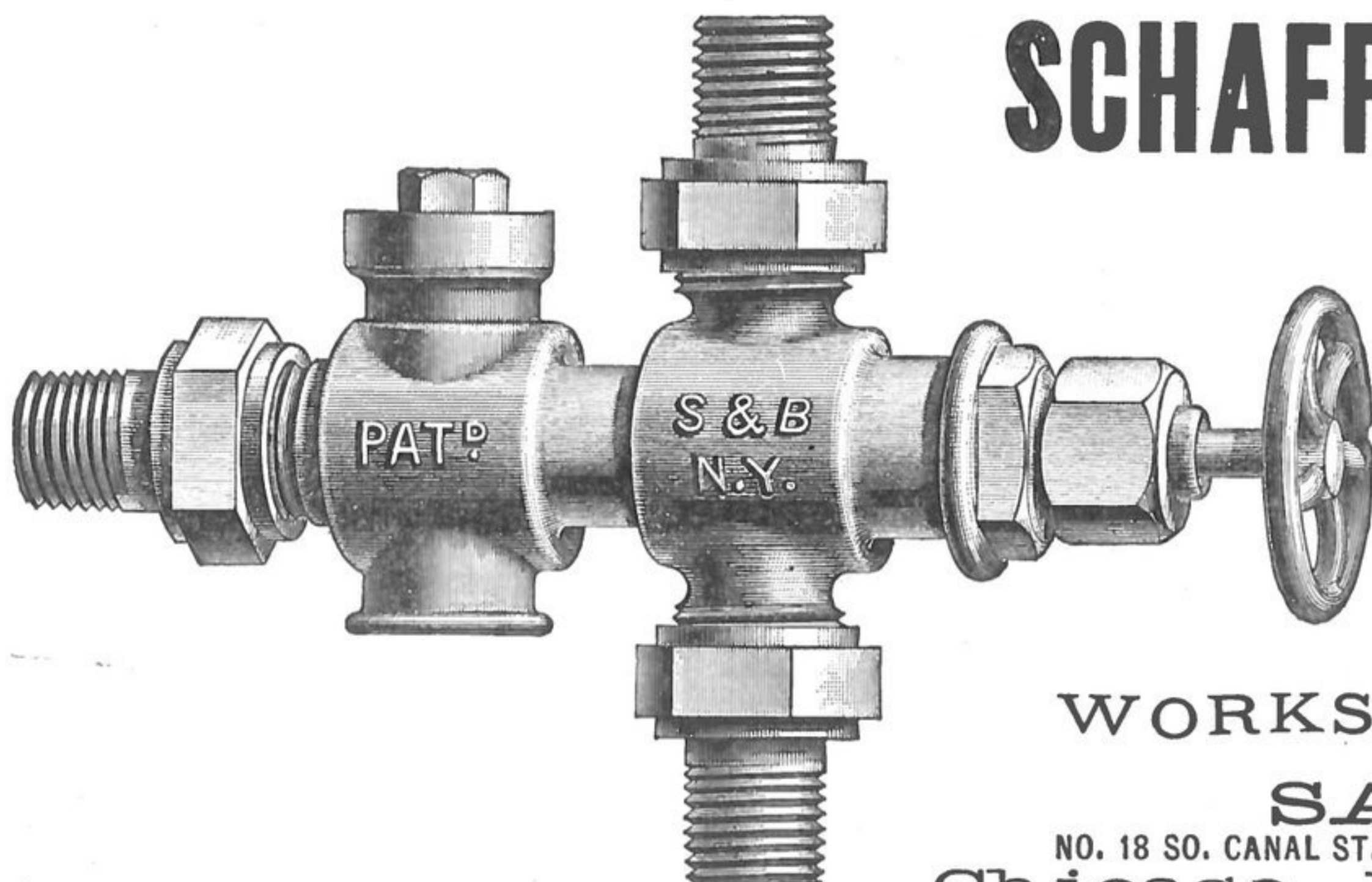
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While this is
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not work out well
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The only Corrugated Iron
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Pressure Gauges for all Purposes

ENGINE COUNTERS AND REGISTERS.

IMPROVED RESTARTING INJECTORS
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PYROMETER AND THERMOMETER, STEAM TRAPS, RE-
DUCING VALVES, AND ENGINE AND BOILER
APPLIANCES IN GENERAL.

WORKS AT BROOKLYN, N. Y.

SALESROOMS:

NO. 18 SO. CANAL ST.,
Chicago, Ill.

NO. 40 JOHN STREET,
New York.

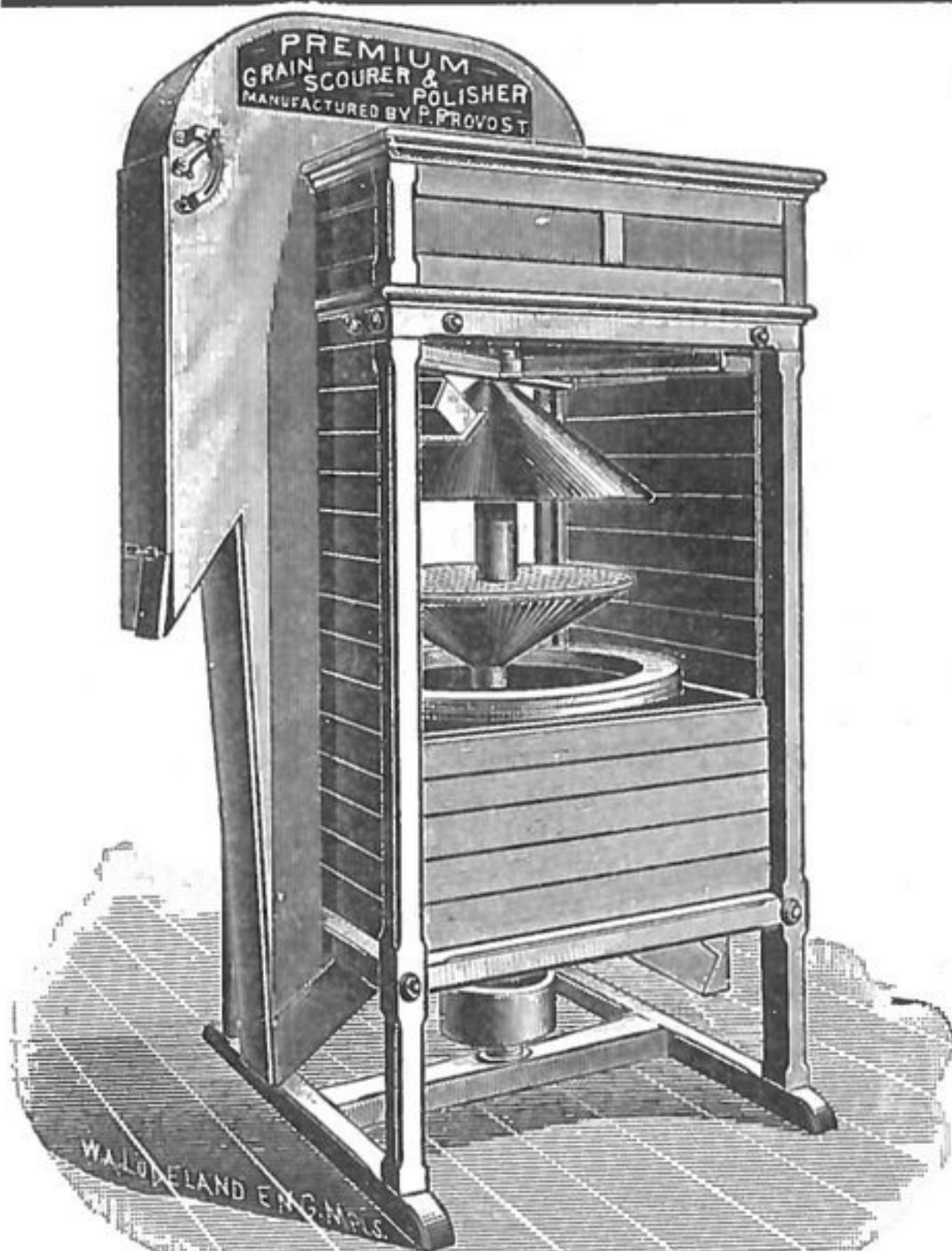


B. D. Lee & Co.'s mill, Belton, Tex., burned.
 The Colfax, Wash., Milling Co. incorporated.
 Wm. Elwell, miller, Sheboygan, Wis., is dead.
 G. W. Moxley's flour-mill, Goshen, Md., burned.
 W. H. McGhee, Bedford City, Va., builds a flour-mill.
 Stone & Robinson, Pulaski City, Va., build a roller mill.
 The Mason Roller Mill & Steam Ginnery, Mason, Tex., burned.
 The Riverside flouring-mill, Waterville, Kan., burned; loss \$12,000.
 R. N. Jones, Nevada, Tex., has built a grist-mill at Thompson's Station.
 Russia is credited with an exportable wheat surplus of 88,000,000 bushels.
 Wm. Green's grain-elevator, Carlisle, O., burned; loss \$6,000; fully insured.
 Swartley Bros. & Co., Doylestown, Pa., are building a 75-barrel roller flour-mill.
 Moore & Anderson's flouring mill, Sardinia, Ind., burned; loss \$7,000; insurance \$4,000.
 C. H. & Geo. H. Smith, Bloomer, Wis., will probably rebuild their burned flour-mill.
 M. E. Britton and Ira Wetcott's Acme Flouring Mill, Eau Claire, Wis., burned; loss \$5,000.
 F. Metzger, miller, New Fountain, Tex., quit at that town and opened at Hondo City, Tex.
 The Key City Barrel Factory & Feed Mill Co.'s milling plant, Dubuque, Ia., was damaged by fire; fully insured.
 Martinsburg, W. Va., men have formed the Victor Flour Bin Co., to manufacture a new flour or grain bin for flouring-mills.
 Hodgson Bros. and others, Athens, Ga., have incorporated the Elevator Mill Co., to operate a grain-elevator and flouring-mill.
 The old Grant grist mill at Wayland Center, Middlesex county, Mass., built by Thomas Cakebread in 1639, was burned September 4.
 E. M. Kelly and others, Nashville, Tenn., incorporated the Liberty Mills; they want machinery for a new flour, grist and meal mill.
 North Dakota wheat-fields, that were said to be "hopelessly ruined," are yielding 15 bushels to the acre, and the grain is of fine grade.
 J. W. Smith and others, Gallatin, Tenn., incorporated the Ajax Milling Co., capital stock \$50,000, to operate the Smith & Cantrell flouring-mill.
 French wheat estimates place the crop at 283,000,000 bushels, against 312,512,000 bushels in 1889 and 280,226,000 bushels in 1888. Rains have hurt grades while harvesting.
 D. Doole and others, Mason, Tex., incorporated the Mason Milling, and Grinning & Mfg. Co., capital stock \$30,000, to rebuild the burned Knock flouring-mill. They want machinery.
 The Ogdensburg & Lake Champlain R. R. Co.'s old grain-elevator, Watertown, N. Y., burned with 500,000 bushels of corn and oats. The elevator was built in 1867 and cost \$150,000; loss covered by insurance.
 Blight is working dreadful havoc in the Northwestern counties of Ireland. In the regions of Donegal and Galway the condition of the potato crop is causing the gravest apprehensions. In the poor and congested districts of Falcarragh and Gweedore the crop is said to be an almost total failure. Even in the less impoverished places it is expected that not quite half the usual crop will be saved. Complaints are being made of the spread of the disease both in England and Scotland. It has not done much harm in Scotland yet, but many fields of potatoes in the Midland counties have been very seriously devastated. There can be little doubt that the blight is the outcome of the abnormal rain-fall of the past few weeks. Where it may now stop it is difficult to say.

An exchange says: A voluminous complaint has been filed in the Wayne (Michigan) circuit court by the receivers of the insolvent George T. Smith Middlings Purifier Co. against George T. Smith and wife and the two companies successively organized by him. In this the entire history of the companies is reviewed, including the sale to Mrs. Smith of all the patent rights and the subsequent transfer by her to Charles H. Plummer, of East Saginaw. The complainants claim that Mr. Plummer paid no consideration for the patents, and accordingly ask the court to restrain him and also George T. Smith and wife from asserting ownership in the same. They also ask for the appointment of a trustee to execute all contracts, transfers and assignments that may become necessary.

Discussing standards of living in the United States at the annual meeting of the American Association for the Advancement of Science last month at Indianapolis, the Statistician of the Department of Agriculture, J. R. Dodge, vice-president of the Association said among other things: Want is not unknown here; the poor and afflicted are everywhere. Yet in large districts in the United States almshouses are unknown, and the poor are too proud for alms. In the older and denser settlements the dependent classes are few in comparison with those of any country in Europe. A comparison with the most favored foreign country will suffice. The tenth census returned 66,203 paupers, or 1.32 to every thousand of the population. The record of 1850 was 50,353, or 2.17 to every thousand. This shows a gratifying decrease in pauperism in a period remarkable for increase of national wealth. In England and Wales the number of paupers in 1873 receiving relief in the several unions and parishes under boards of guardians was 887,345, and in 1888 the number was 825,509. The returns do not quite cover the entire population, which was 28,628,804 in 1888; but assuming that they cover all of England and Wales, the number would be 28.8 for every thousand people. This is in violent contrast with the situation in this country. In the use of food our people are profuse and even wasteful. All classes use meats freely, ordinarily three times daily. A great variety of fish, oysters that have a fame extending beyond seas, and various forms of the crustacea enrich the national dietary. According to accepted statistics, Great Britain consumes an average meat ration not over two-thirds as large as the American, France scarcely half as large, Germany, Austria and Italy less. The more favored and fortunately conditioned laborer of continental Europe gets meat on Sundays, and two or three times during the week, yet the statements of one of our consuls in Germany that "the workingmen rarely eat meat, except in the form of sausage, and his wife and children scarcely know the taste of it," is fairly representative of large districts of many countries. Another, writing from Italy, refers to laborers as "living on what our workmen would despise." A large proportion of the meat used by the peasantry and continental laborers is in the form of soups, to give a flavor and a suggestion of fatness to the vegetables which constitute the substance and nutrition of the daily diet. The water in which our meats and vegetables are boiled, which is sent to the sewer, would suffice as the basis of palatable and nutritious food for millions of Europeans. If solid food is preferred to liquid, it may be had in Italy and elsewhere, a "thick porridge, made of vegetables, flour and corn-meal, boiled in water, an adhesive mass of the consistency of clay, cut with a wire like soap." In the United States the consumption of meat averages 175 pounds per head, while European countries average from 50 to 100 pounds. In grain, clothing, wages, privileges and general conditions the United States average is far above the European average.

In the issue of *Good Housekeeping* for September 13 Mrs. Helen Campbell asks, "Why is there Objection to Domestic Service?" and attempts to answer the question. Those who are interested in this great problem of our civilization will find her deductions well worth reading and considering. There is also a valuable paper of considerable length on "The Feet and Their Coverings," in the limits of which the author gives considerable attention to smallness of the feet and tight shoes. All the ladies will want to read this article, as they are interested in small and handsome feet. Clark W. Bryan & Co., Springfield, Mass.



THE PREMIUM GRAIN SCOURER AND POLISHER.

This machine is guaranteed to do more and better scouring than any other machine in existence. Is easily set up, requires little or no care, except oiling.

Samples of Work Sent on Application

Address for full particulars,

PETER PROVOST

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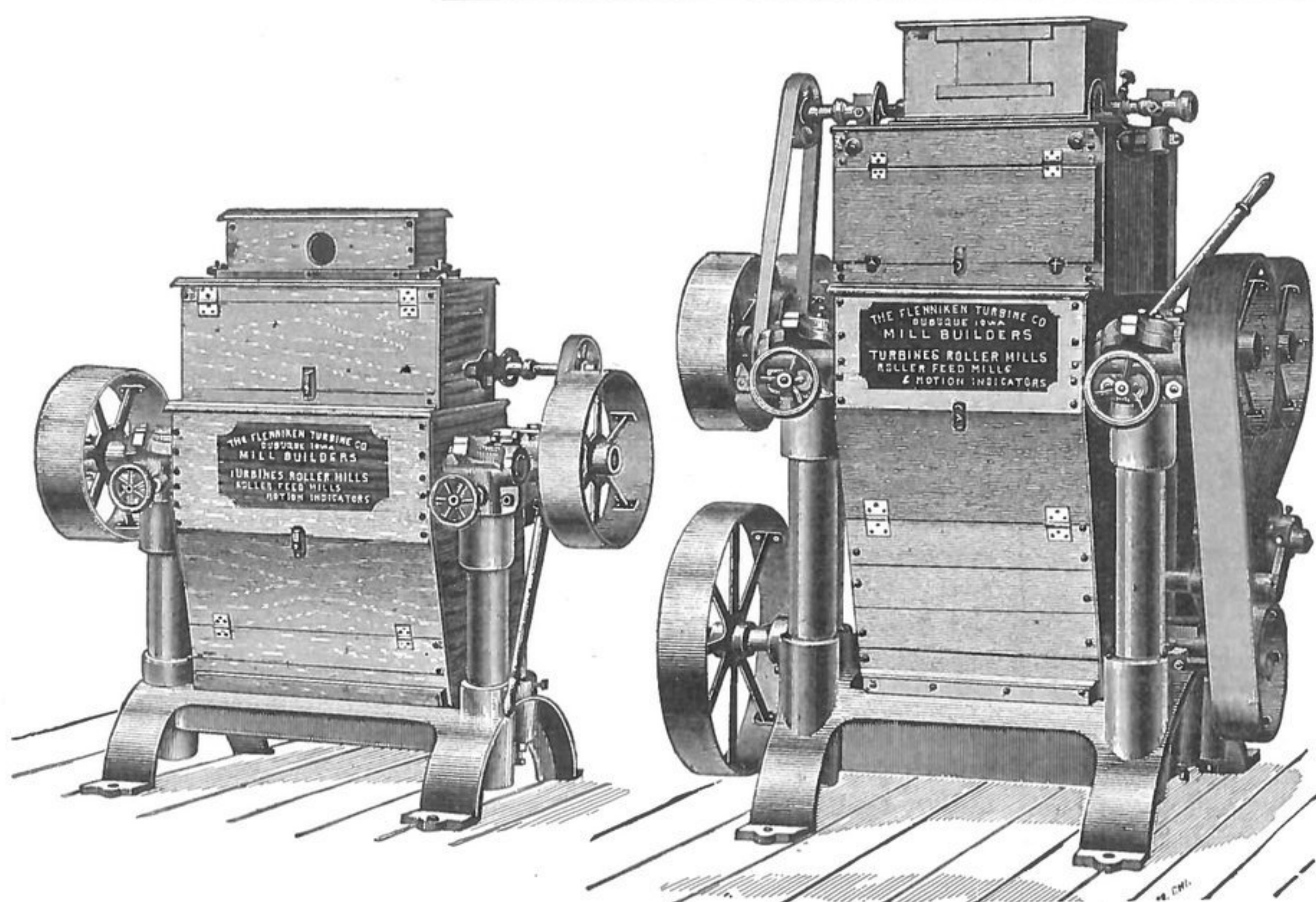
MINNEAPOLIS, MINN.

ONE REDUCTION TO THE FRONT!

*Ye jolly millers, one and all,
Who granulate with burrs,*

A Moses has Come to Deliver You from Egypt. Cease Trying to Make Bricks without Straw. The Red Sea of Expense Has Been Divided.

The Wilderness of Reductions has Been Shortened. There is Manna in Abundance for Those Who Believe. Listen to the Glad Tidings of Great Joy!



ONE REDUCTION ON ROLLS IS A SUCCESS! Two years of experience in a dozen States, with all kinds of Wheat and diversified climates, has justified us in recommending its adoption in place of burrs in each and every case, whether for grinding Wheat, Rye or Buckwheat. We have perfected Roller Mills, Bolts and Scalpers peculiarly adapted to the wants of Small Mills, and all our machines *infringe no patents*, and no claims are made that they do.

Having consummated a bargain with **MR. O. C. RITTER**, the author and patentee of **One Reduction**, which gives us the *exclusive right* to construct mills under his patents, our patrons in the future will receive a license from Mr. Ritter.

SPECIALTIES!

{ Graham Roller Mills, Round Reels and Scalpers, Sectional Round Reels, Grain Separators, Motion Indicators. Before buying any of these machines send for our prices and descriptive circulars.

SPECIALTIES!

Second-Hand Machinery, and Bargains in Every Line.

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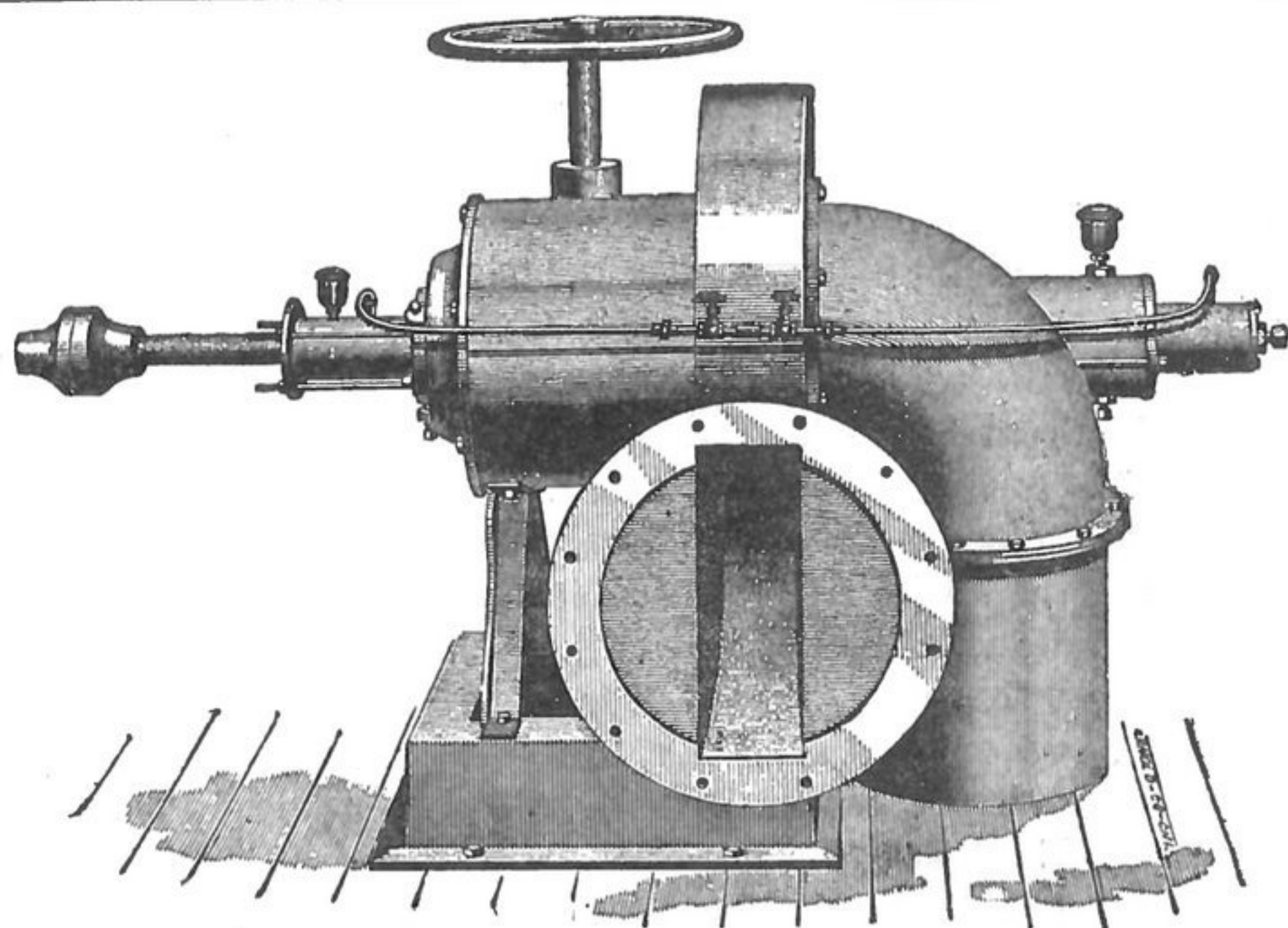
The Best Turbines!

VERTICAL OR HORIZONTAL,
With or Without Iron Flumes,

—BUILT BY THE—

Flenniken Turbine Co.

DUBUQUE, - IOWA.



EUROPEAN ECHOES.

THE Russian wheat crop according to the latest advices has turned out very disappointing in yield and inferior in quality, so that it is doubtful if it will reach an average of 29,000,000 quarters, although the Minister of Agriculture estimates winter wheat to be 10 to 15 per cent. above an average. Chartering in the Azof ports has been rather more active of late, but very little has been done at Odessa, and as stocks in the ports are very small, the autumn shipments are not likely to equal those of the two previous years. In Roumania a fine wheat crop has been gathered, and an unusually large quantity has already been sold for the United Kingdom for August to October loading, as well as for Antwerp. The maize crop, both in Wallachia and Moldavia, has been seriously injured by the drouth and is expected to be 40 per cent. below an average.

THERE is an improvement in the condition of the maize crop in Austria-Hungary, but the estimates concerning wheat are very rosy. One Pesth journal put the yield in Hungary at 20,000,000 quarters, which would mean that, as the home consumption is 11,000,000 quarters, and Austria requires about 5,000,000 quarters, that about 4,000,000 quarters would be available for export; still another advice estimates the surplus as 7,000,000 quarters. Judging from the latest official report as to the condition, the yield can not be over 19,000,000 quarters, while that in Austria may reach 6,000,000 quarters. The surplus for export may be judged by the following figures of previous crops and exports:

	Crops in Austria Hungary. Quarters.	Exports. Quarters.
1887-88.....	24,200,000	2,100,000
1888-89.....	23,406,000	3,300,000
1889-90.....	16,030,000	1,250,000
1890-91.....	25,000,000	*3,500,000
*Estimated.		

SAYS the London "Miller" of August 25: There have been many and serious interruptions to harvest work in the past week. Nevertheless favored districts have not only saved their corn, but sent it to market. Reports come of new red wheat in the Midlands offered at 33s. to 35s., while in the home counties 44s. has been paid for a white sample. These quotations are extreme, and probably 35s. to 40s. per 504 pounds is a range that would include most samples. This should be the case when the Americans are wanting 37s. to 39s. for their shipments, and when flour is still being appreciated, gaining 6d. to 1s. per sack more money from its recent advance. Confidence is a good horse for the farmer to ride upon to the market, but it should not go too fast, and it is the miller that has the last word in buying wheat. Present rates may therefore well be shaken down a little should our English wheat crop be finally secured in fair order; but the foreign trade is rather backing up than opposing the tendency of value to rise in our markets. Farmers and millers alike appear desirous that prices should never return to the depreciated levels of recent years. * * * That frost should be reported to have destroyed 75 per cent. of the crop of Manitoba does not come unexpected, since in Chicago a week ago there were rumors of frost damage in the Northwest American States. Spot shipments of red winter wheat are offered at 36s. 6d. Californian only seems available when 37s. 6d. to 38s. 9d. are offered. Generally the promise of exports from west to east is more slender and uncertain than usually so in August. Eastward, that is, from Russia, Roumania, Hungary and districts making use of German ports, there are active present shipments and future promise, but only to a moderate extent to all buyers, and the latter include French, Italian, Swiss, Belgian and Dutch, as well as English. There is disappointment of the Russian harvest yield in some districts and satisfaction in others. Moreover, there are efforts being made to ship promptly this autumn, but the general position of the wheat markets in Europe and the established advance in the value of silver have given to Russia and other sellers a confidence to hold wheat or only to sell it at about present rates. Indian wheat shippers entertain similar views, and it may be said the visible supply of cheap wheat is very small indeed.

MILLING PATENTS.

Among the patents granted Sept. 9, 1890, are the following: Stacy B. Hart, Peoria, Ill., No. 435,968, a grain-spout.

Wm. D. Gray, Milwaukee, Wis., No. 436,234, a roller grinding-mill.

Martin W. Leonhardt, St. Louis, Mo., No. 436,247, a bolt-ing-reel.

The passage of the silver bill and the rapid advance of silver under its operation will prove one of the most valuable measures to American farmers that the present Congress could have passed. Heretofore the British have been buying American silver at about \$1 an ounce, and using it in the purchase of Indian and Australian wheat and other agricultural products at the rate of \$1.29 an ounce. This has enabled them to obtain \$1.29 worth of these products from those countries at the cost of \$1, which has been a very great discrimination against American agriculturists. When it becomes necessary for them to pay \$1.29 an ounce for silver, and they can get no more for it in such purchases, they will become much larger buyers of American agricultural products, and the threatened competition of India and Australia will vanish.—*Kansas City "Commercial."*

COMMENDATORY COMMUNICATIONS.

THE ALLFREE MILLS VERY POPULAR.

SIMMONS BLUFF, TENN., August 26, 1890.

THE J. B. ALLFREE CO., INDIANAPOLIS, IND. GENTS: We feel it our duty to say something to you in regard to the 70-barrel roller mill you built for us. We have been running three or four weeks, and we can safely say that we can compete with any of the mills in our county and adjoining counties, both in quantity and quality. We make as good a clean-up as can be made with any mill. Our customers, who left us when we were running the buhr mill, are returning fast. We are doing a good business, and we have never yet heard a complaint. Our merchants who handle our flour say it beats anything they have ever handled. Your machinery is first-class in every respect, and the workmanship can not be beat. We mean what we say, and we are not afraid to put our flour on any market. Any one who contemplates building a mill would do well to engage The J. B. Allfree Co. to do their work, for they will never regret it. P. S.—You can publish this testimony just to suit yourselves, gentlemen, for we know we can not say anything about your machinery or mill but of the very best terms and praise. We are going to build another mill. It will be built by a stock company, and we are going to get The J. B. Allfree Co. to do the work. BENNETT & CASTLEMAN.

FREETOWN, IND., April 7, 1890.

THE J. B. ALLFREE CO., INDIANAPOLIS, IND. GENTLEMEN: We have had the mill you built for us in successful operation since November, 1889. We are glad to say that we have one of the best 60-barrel mills in the State. Our flour will compete with anything in the market; our percentage of low-grade is very small, and our clean-up is as good as we ask. Your rolls, in our judgment, are superior to anything else on the market, being light running, easily adjusted, and having other improvements which we fail to find on any other roller-mill. Your "Success" bolters, centrifugal, bran-duster, and, in fact, all the machines give perfect satisfaction. Everything is smooth, cool and easy, making the least noise of any mill of the same capacity we have ever been in when running. A farmer came in a few days ago and said that our mill did not make any more noise than easy-running sewing-machine. We honestly believe that our line of machines has more points of excellence than any others we have seen, which is evident from the fact that this is the second complete mill which you have built for us, or practically the firm, within four years, both of which are running, this latter being an improvement over the former one, and is what its name implies, a "Model Roller Mill."

TOBROCK, ALDENHAGEN & Co.

CATARRH.

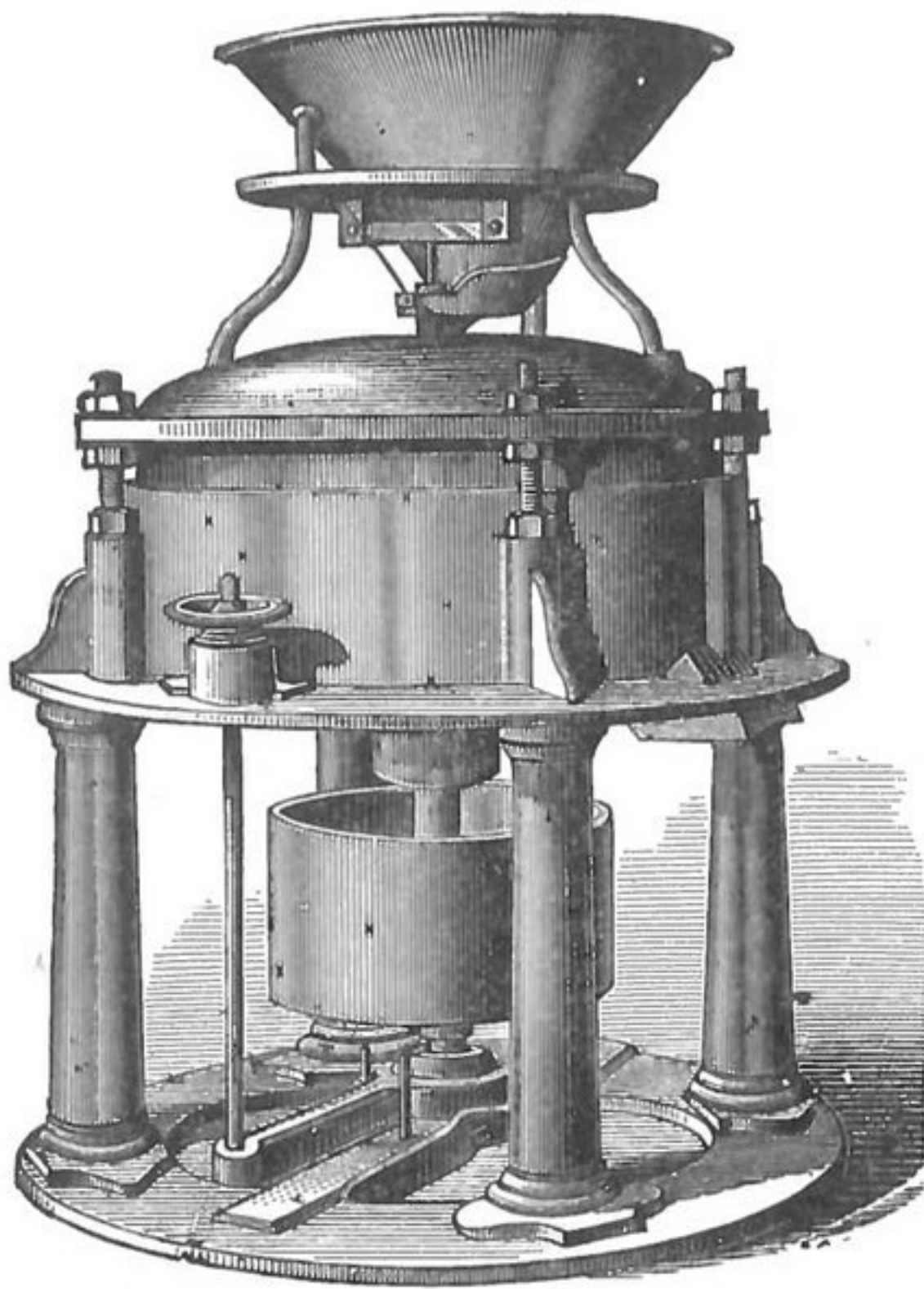
CATARRHAL DEAFNESS—HAY FEVER.

A NEW HOME TREATMENT.

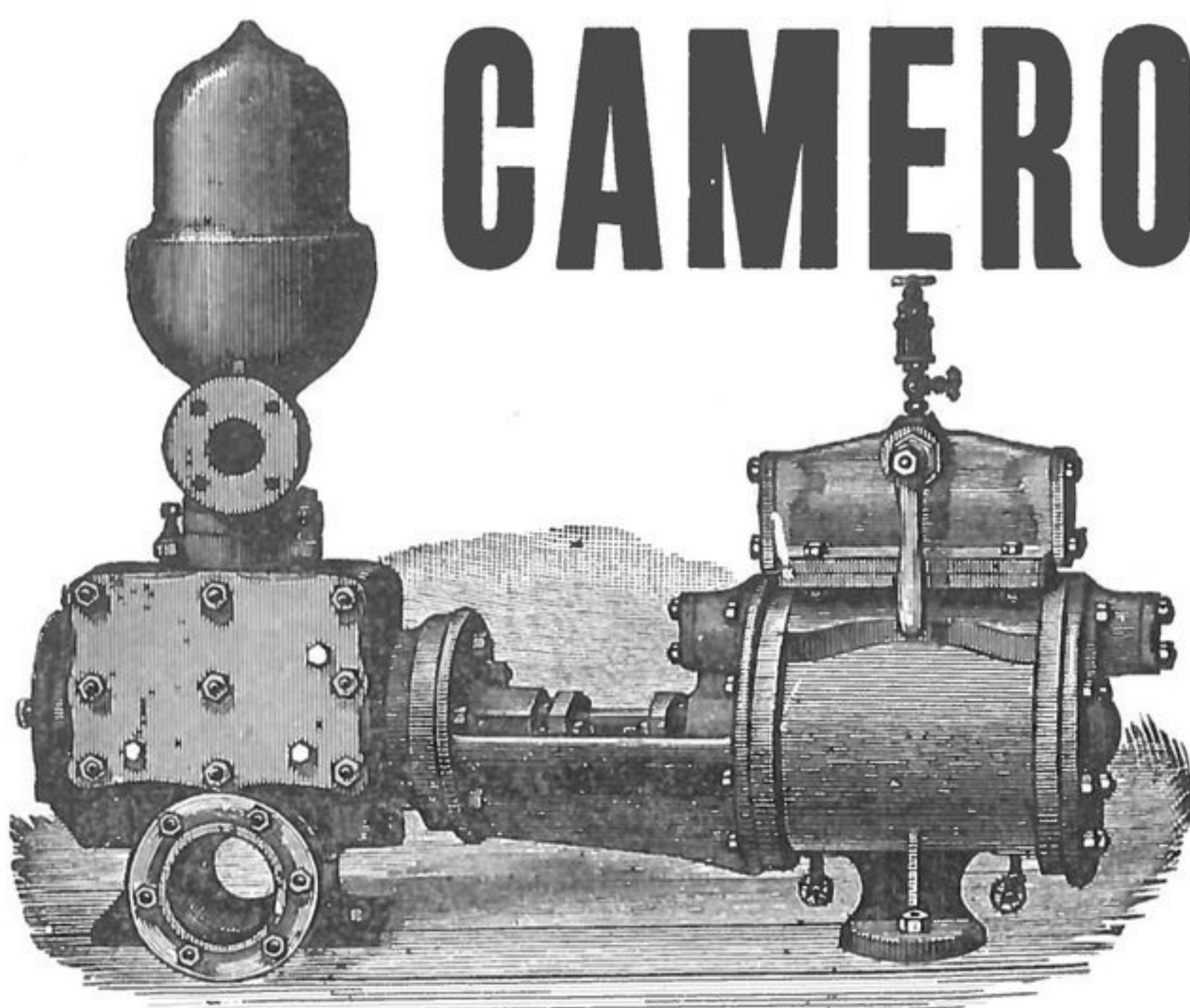
Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King street, Toronto, Canada.—*Christian Advocate.*

Sufferers from Catarrhal troubles should carefully read the above.



MUNSON BROS., UTICA, N. Y.,
—MANUFACTURERS OF—
PORTABLE MILLS
FOR CORN AND FEED GRINDING,
—WITH—
FRENCH BUHR and ESOPUS STONES
Shafting, Pulleys, Hangers, Etc., and General
Mill Furnishings.
SEND FOR CATALOGUE AND PRICE LIST.



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.

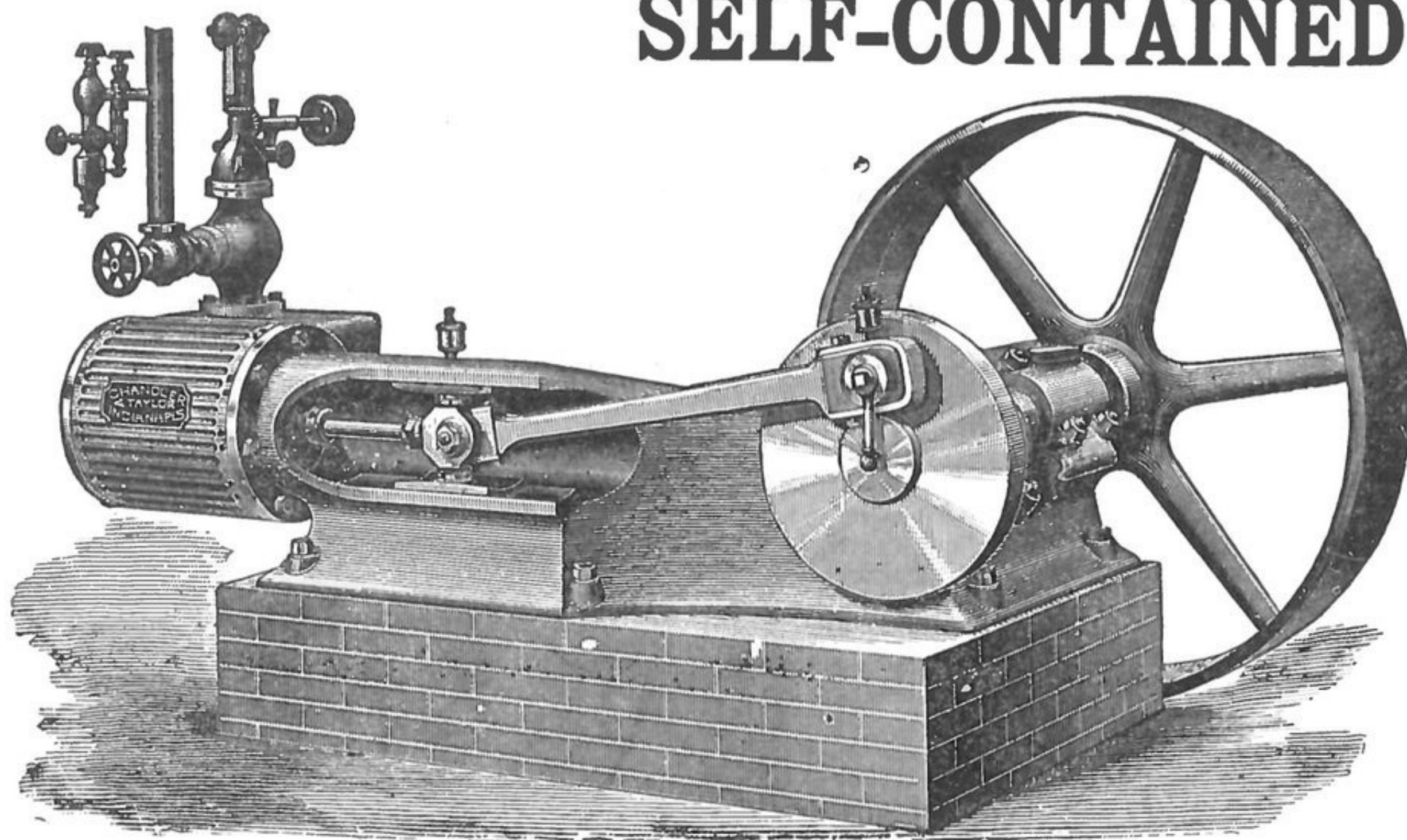
SIMPLE! COMPACT! DURABLE!
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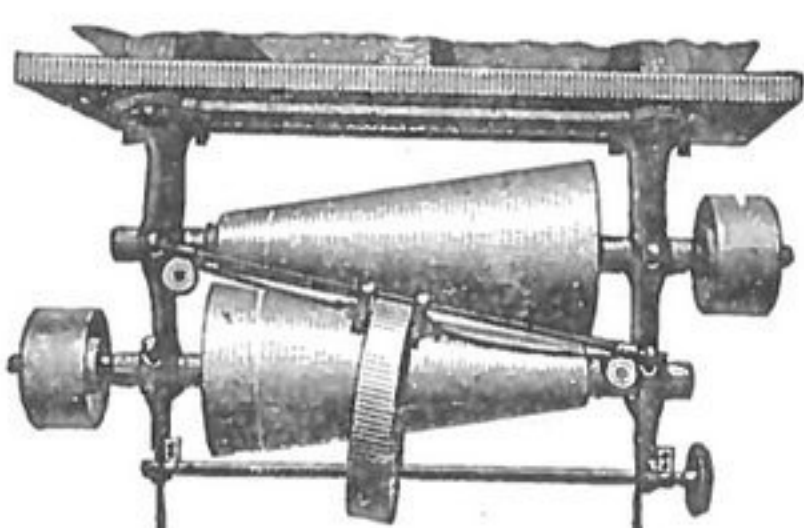
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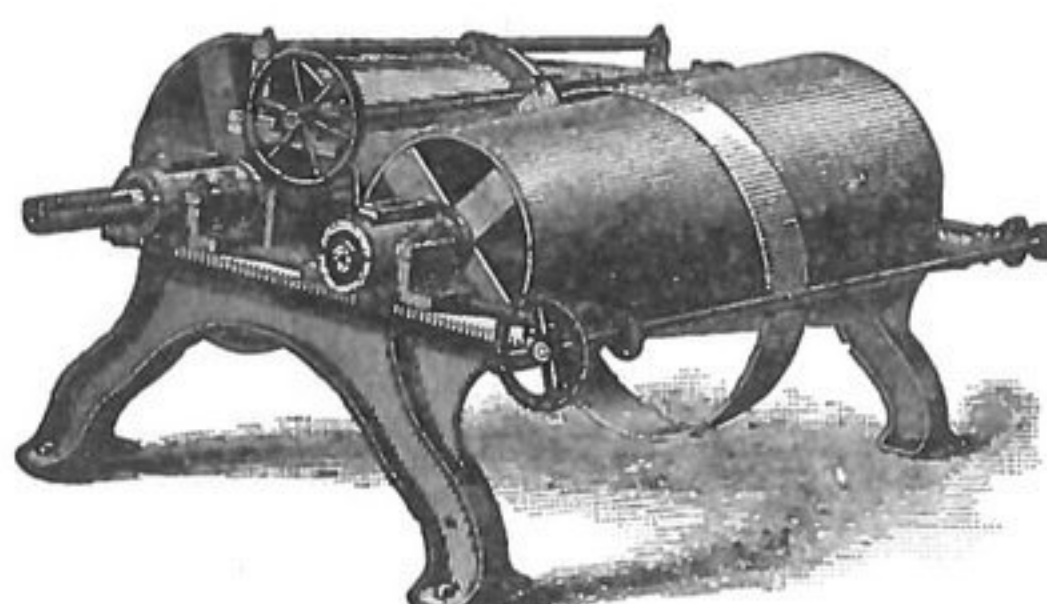
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OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Sept. 13, 1890.

Friday of last week brought wheat close to the dollar notch in New York city, without any apparent cause. An English estimate of a 25,000,000-bushel shortage in the wheat exporting countries, compared with the wants of the importing countries, alone kept the New York market from going below the dollar notch. The markets were less active, more irregular and weaker at the opening, with slightly improved closing on improving demand. The bulls predicted an upward movement again in prices, claiming that the weak longs had been "shaken out," that the trade had gone "short" again generally, and that every element in the situation remained in favor of an early advance. In New York September wheat sold down to \$1.00½ and closed at \$1.01½, with Atlantic port receipts 35,850, exports 63,652, and options 2,824,000 bushels. September corn closed at 52½c., with receipts 78,844, exports 173,534, and options 920,000 bushels. September oats closed at 40½c., with receipts 182,267, exports 17,975, and options 45,000 bushels. Wheat flour was dull, weak and lower to sell. Receipts included 2,137 sacks and 28,788 barrels, and exports 21,152 sacks and 39,578 barrels. The other lines showed no marked features.

Saturday was a day of stronger markets, on steadier cables, foreign buying and unfavorable crop reports, with small receipts. September wheat opened at \$1.02 and closed at \$1.01½, with receipts 26,368, exports 3,012, and options 1,150,000 bushels. September corn opened at 52½c., and closed at 52½c. on threatened frost in several corn sections. Receipts were 40,400, exports 78,930, and options 400,000 bushels. September oats closed at 40½c., with receipts 118,604, exports 19,949, and options 45,000 bushels. Wheat flour was dull and in small trading, with prices not notably changed. Receipts included 7,738 sacks and 32,351 barrels, and exports 3,291 sacks and 3,943 barrels. The other lines were quiet and featureless.

Monday was a day of dull and irregular markets, closing generally weaker. September wheat closed at \$1.00½, with receipts 118,772, exports 9,460, and options 2,250,000 bushels. London cables reported fine weather in Europe. September corn closed at 53c., with receipts 95,158, exports 80,610, and options 608,000 bushels. Iowa and Nebraska reported light frosts in the corn belt, but no damage. September oats closed at 40½c., with receipts 176,147, exports 15,589, and options 50,000 bushels. Wheat flour was in little better demand at the opening, but the break in wheat scared off the buyers. Receipts included 9,410 sacks and 25,454 barrels, and exports 2,576 barrels. The minor lines were featureless. The visible supply in the United States and Canada was:

	1890.	1889.	1888.
Wheat.....	Sept. 6. 17,500,391	Sept. 7. 14,098,032	Sept. 8. 30,437,690
Corn.....	8,251,146	12,090,698	9,089,267
Oats.....	3,843,678	6,111,257	4,424,748
Rye.....	571,800	980,706	378,003
Barley.....	562,238	295,743	109,565

Tuesday opened with the bearish elements predominant. Fine weather was reported in the west and in Europe, and Hutchinson in Chicago led a selling raid by the larger dealers. Later in the day the tide turned, on some speculative buying in Chicago, which was taken to mean that there had been decline enough to make buying safe and profitable. September wheat sold down to 99½c. in New York and closed at \$1.00½, with receipts 155,801, exports 2,226, and options 3,376,000 bushels. A Michigan State Board report makes the crop of wheat in that state 24,000,000 bushels, against 21,000,000 earlier in the season. September

corn closed at 53½c., with receipts 304,528, exports 73,722, and options 1,046,000 bushels. September oats closed at 40½c., with receipts 229,676, exports 24,798, and options 75,000 bushels. Wheat flour was dull, weak and lower on all high and medium grades, with pressure from western millers to sell both spring and winter flours. Receipts were 4,068 sacks and 42,309 barrels, and exports 26,382 sacks and 3,805 barrels. The minor lines were featureless.

The followings shows the amount of wheat and flour, together with the amount of corn on passage to United Kingdom, for ports of call or direct ports for the weeks mentioned:

	1890.	1890.	1889.
	Sept. 9.	Sept. 2.	Sept. 10.
Wh. & flour, qrs.	2,467,000	2,467,000	1,788,000
Corn, qrs.....	663,000	629,000	403,000

The following shows the amount of wheat and corn on passage to the Continent for the past week, the previous week, and for the same week last year:

	1890.	1890.	1890.
	Sept. 9.	Sept. 2.	Sept. 10.
Wheat, qrs....	545,000	460,000	349,000
Corn, qrs.....	135,000	148,000	141,000

Shipments India wheat to United Kingdom..... 52,000
do do Continent..... 7,500

The imports into the United Kingdom for the past week and the previous week and for same week last year:

	1890.	1890.	1890.
	Sept. 9.	Sept. 2.	Sept. 10.
Wheat, qrs.....	346,000	546,000	334,000
Corn, qrs.....	185,000	231,000	186,000
Flour bbls.....	161,000	150,000	197,000

Wednesday brought the appearance of a reaction from the bearish market movement. Without any good apparent reason the markets have been falling. The bears seemed to understand the slumping and sagging quite as little as the bulls understood it. Every statistical element seemed to call for higher prices, and every day the market returns showed lower prices, the loss for a week being 5@6c. on wheat. On Wednesday there were higher cables, smaller movement and rumors that the Government report for September would be very bullish. The result was dullness, strength and an advance generally. September wheat closed at \$1.01½, with receipts 81,248, exports 22,952, and options 1,720,000 bushels. September corn closed at 53½c., with receipts 186,958, exports 130,801, and options 1,240,000 bushels. September oats closed at 42c., with receipts 193,417, exports 15,495, and options nominal. Wheat flour was unchanged, but steadier, with wheat. Receipts were 4,375 sacks and 25,540 barrels, and exports 16,712 sacks and 44,585 barrels. The minor lines were featureless.

Thursday brought a decided change in the grain markets on the expected Government report, which was even more bullish than the bulls anticipated and the bears had feared. The report shows that the injury to the corn crop reported in August was intensified by continuance of drought in August until the rains came to its relief, but too late for full recovery. The average is 70.1 against 73.3 last month. It is the lowest average since 1881. The returns of condition of winter wheat at the time of harvesting are less favorable than those of the 1st of July. So far as threshing has progressed the results are generally disappointing. The July average was 76.2, the present average 73.5. The general average of spring wheat has also been reduced from 83.2 to 79.8. The average for wheat of both kinds is 75.5. In 1888 the September average for both kinds of wheat was 77; it was 73 in 1881. The yield of spring wheat is unusually variable in the Dakotas, ranging from high yields to 5 bushels and less per acre. On the coast from New Jersey to Maryland and in North Carolina, Tennessee, Kentucky, Arkansas and Missouri, as also in Northern New England and Florida, there is improvement in corn since August 1. In Michigan, Wisconsin, Indiana, Georgia, Alabama, Louisiana and Texas the condition is unchanged. A decline has occurred in New York, Ohio, Illinois and in all the Northwestern States and in some other of less importance. The crop is late in the Eastern States, requiring maturing weather throughout September. It is also late and vari-

able in development in New York and Pennsylvania. The Atlantic Coast States return relatively high condition, impaired locally by the effects of mid-summer drouth and later storms. In Tennessee, Mississippi, Arkansas and Texas drouth more or less severe from the 20th of June to the middle of August reduced the condition too low for subsequent recovery, as the crop was maturing or ripe before the rains came. The Ohio Valley and the Missouri Valley report protracted drouth and low condition. While the rains of the last two weeks of August were beneficial everywhere, they did not always restore the losses of the first half of the month. In the bottom lands, where growth was maintained, the recent rainfall will make a good crop, while the drier uplands were beyond recovery. The lowest condition is in Kansas, though some of the eastern counties make good returns. The Dakotas and Nebraska are little higher. The crop is late and will require as much time to mature on the latitude of 40 degrees as for the earlier varieties grown on the line of 42 degrees. Rye yields less than was expected, as the condition is reduced to 85.4. The September condition of oats is the lowest ever reported, having fallen from 70.1 in August to 64.4. The rate of yield will be the smallest in 20 years. The condition of barley is not very seriously lowered, from 82.6 to 78.6. Buckwheat fully maintained its August condition, the average being 90.5 against 90.1. The figures for potatoes have fallen since August 1 from 77.4 to 65.7, the lowest average ever before reported, that of 1887 being 67.3.

Naturally enough, this report sent the markets "kiting." In New York September wheat closed at \$1.06, October at \$1.07, November at \$1.08½, December at \$1.09½, January at \$1.10½, and February at \$1.11½. Receipts were 24,000, exports 25,000, spot sales 33,000, and options 8,768,000 bushels. September corn closed at 57½c., and October at 57c., with receipts 1,950, exports 126,000, spot sales 61,000, and options 3,408,000 bushels. Cold weather threatened in the western corn belts aided the Government report in strengthening corn. September oats closed at 45c., with receipts 111,000, spot sales 156,000, and options 470,000 bushels. Rye grain was firm at 69@71c. Barley was strong at 74c. for Milwaukee to arrive, and 74@80c. for 2-rowed State. Barley malt was dull at 80@85c. for country, and 85@95c. for city.

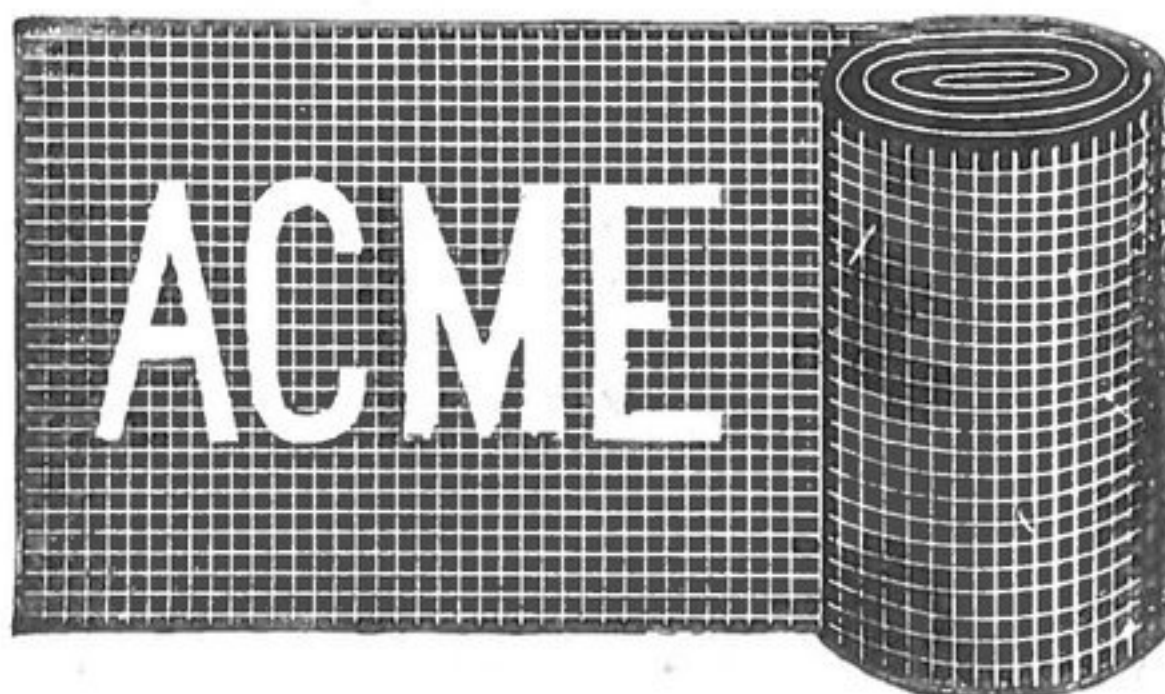
Wheat flour was higher and more active. Receipts were 19,000 and sales 20,000 packages. Quotations were as follows: Low extras \$3.35@3.90; city mills \$5.10@5.25; city mill patents \$5.50@6.35; winter wheat low grades \$3.35@3.90; fair to fancy \$4.00@5.40; patents \$4.65@5.90; Minnesota clear \$4.45@5.25; straight \$4.75@5.75; Minnesota straight patents \$5.25@6.25; rye mixture \$4.50@5.10; superfine \$2.85@3.85. Corn-meal was dull and unchanged at \$2.50@3.15. New buckwheat flour appeared on the market, but not quoted. Rye flour was firmer at \$3.40@4.00. The output of the Minneapolis mills last week was 160,925 barrels.

BUFFALO MARKETS.

Buffalo, N. Y., September 11, 1890.
Everything kited here, with New York and Chicago on the Government report. WHEAT—Only a few sales were made, millers not daring to do much. Sales were made of 16,000 bu old No. 1 Northern at \$1.13½, 16,000 bu do at \$1.15, and 8,000 bu old No. 2 Northern at \$1.12½. The market closed at \$1.18½ for No. 1 hard, \$1.15½ for No. 1 Northern, \$1.13½ for No. 2 Northern, and \$1.04½@1.05 for No. 2 red and No. 1 white. CORN—The upward tendency in prices prevented heavy heavy deals, and at the close No. 2 yellow was held at 55½c, No. 3 do at 54½@55c; No. 2 corn at 54½c, and No. 3 do at 54½c. These quotations were based on the closing prices in Chicago. OATS—Sales were reported of a good many cars No. 2 white to arrive at 4½c, but at the close this grade was held at 43c spot, No. 3 white at 42c, No. 4 do at 41½c, and No. 2 mixed at 42c. BARLEY—No sales were reported. Quotations 65@72c for Western. RYE—The market is entirely nominal at 66@70c for No. 2. OAT-MEAL—Akron, \$6.45; Western, \$6.20 per bbl; rolled oats, in cases, 72 lbs, \$3.10. CORNMEAL—Coarse, \$1.00@1.05; fine, \$1.05@1.10; granulated \$1.60 per cwt. MILL-FEED—City-ground coarse winter, \$17.00@17.50 per ton; fine do. \$17.50@18.00; finished winter middlings, \$.....@20.00; coarse spring do, \$19.

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B. Rye mixt...	4.75	Crck'r flour...	5.00@5.25	Crck'r flour...	5.00@5.25
Low Grades...	3.50	Low grades...	3.25@3.50	Low grades...	3.25@3.50
Rye flour...	3.50@3.75	Graham.....	4.75@5.00	Graham.....	4.75@5.00

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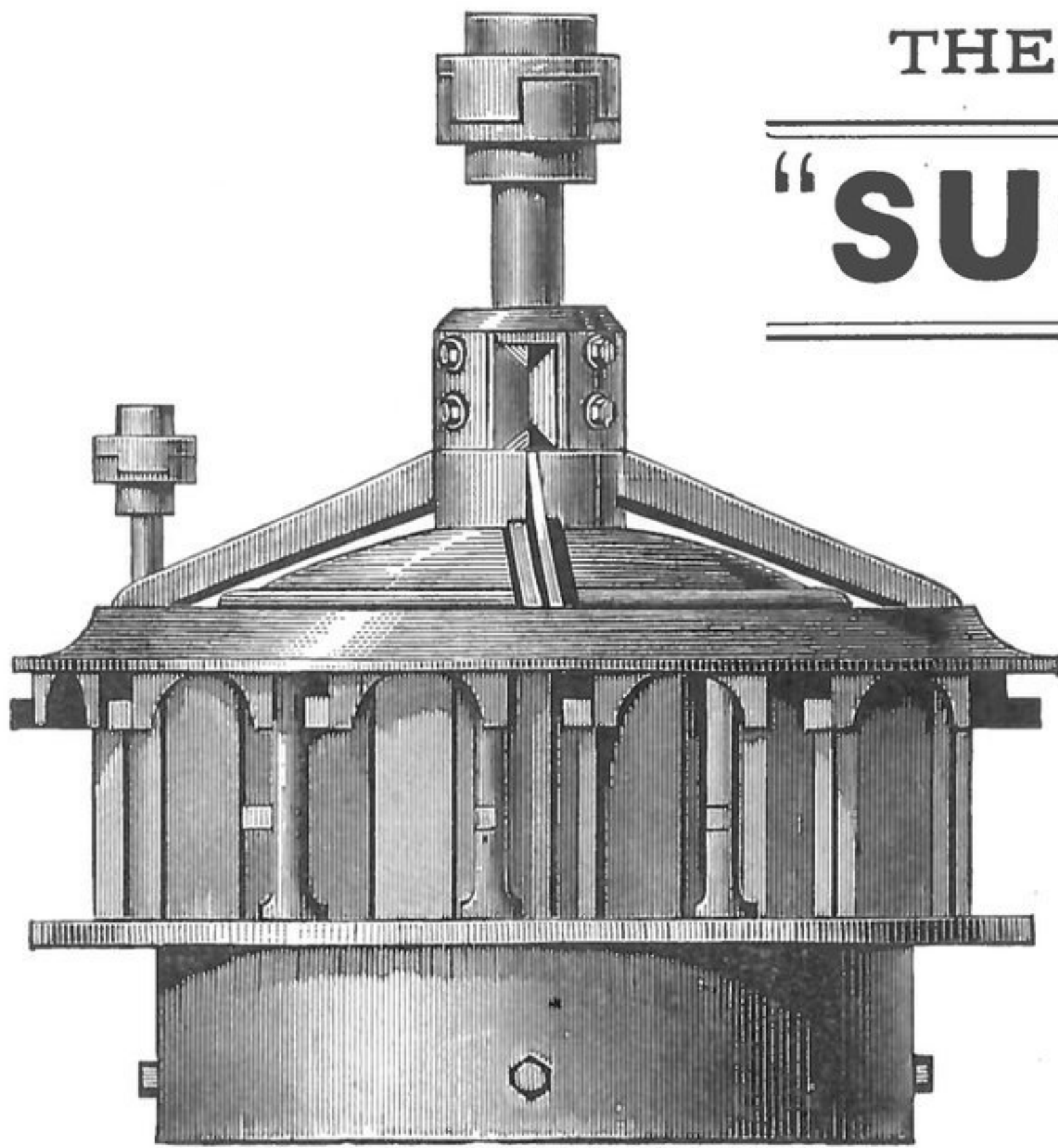
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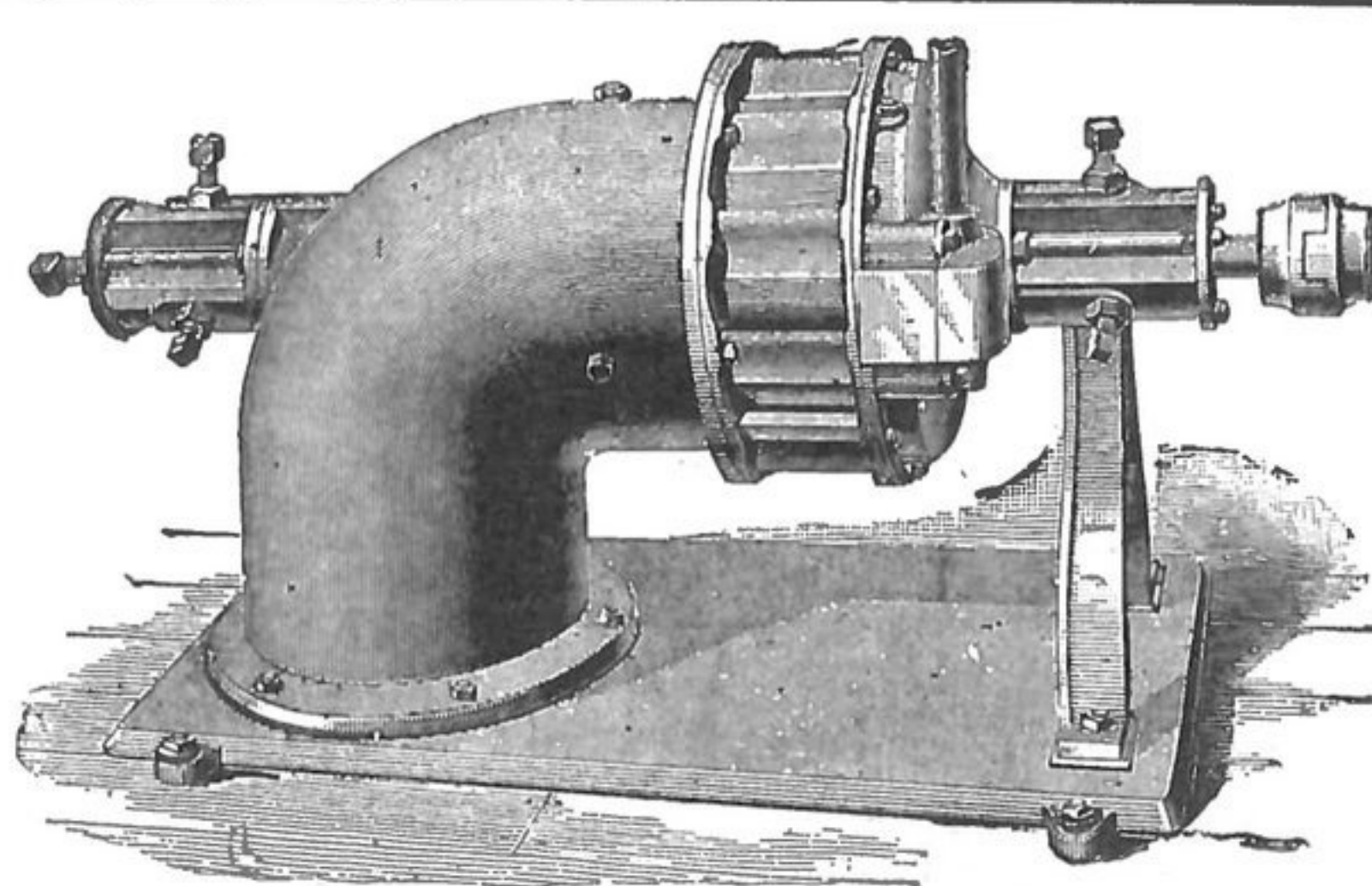
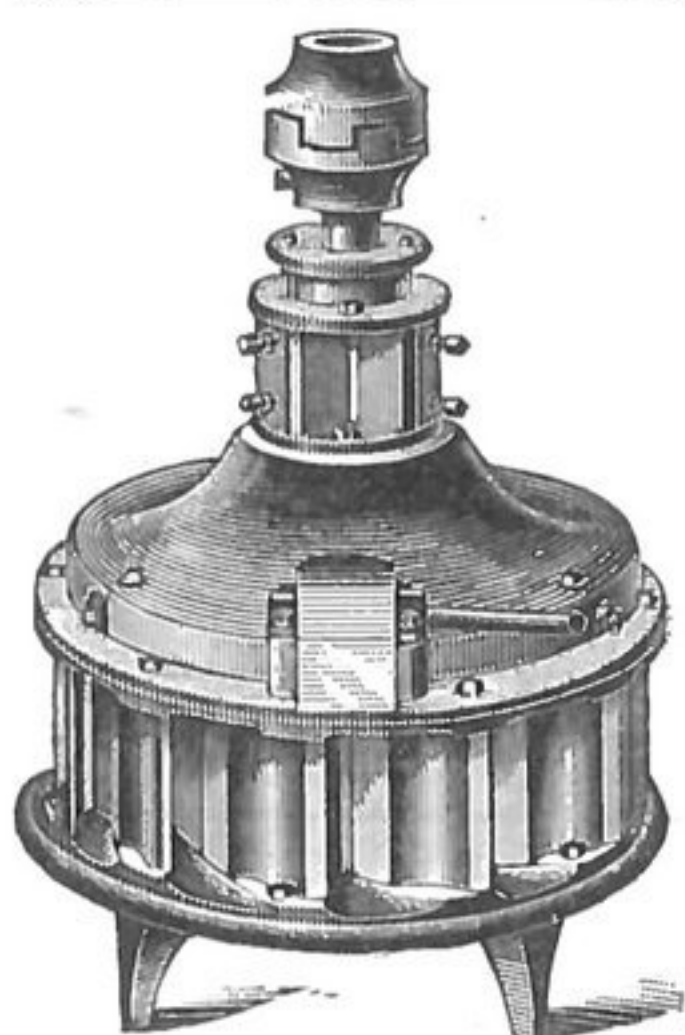
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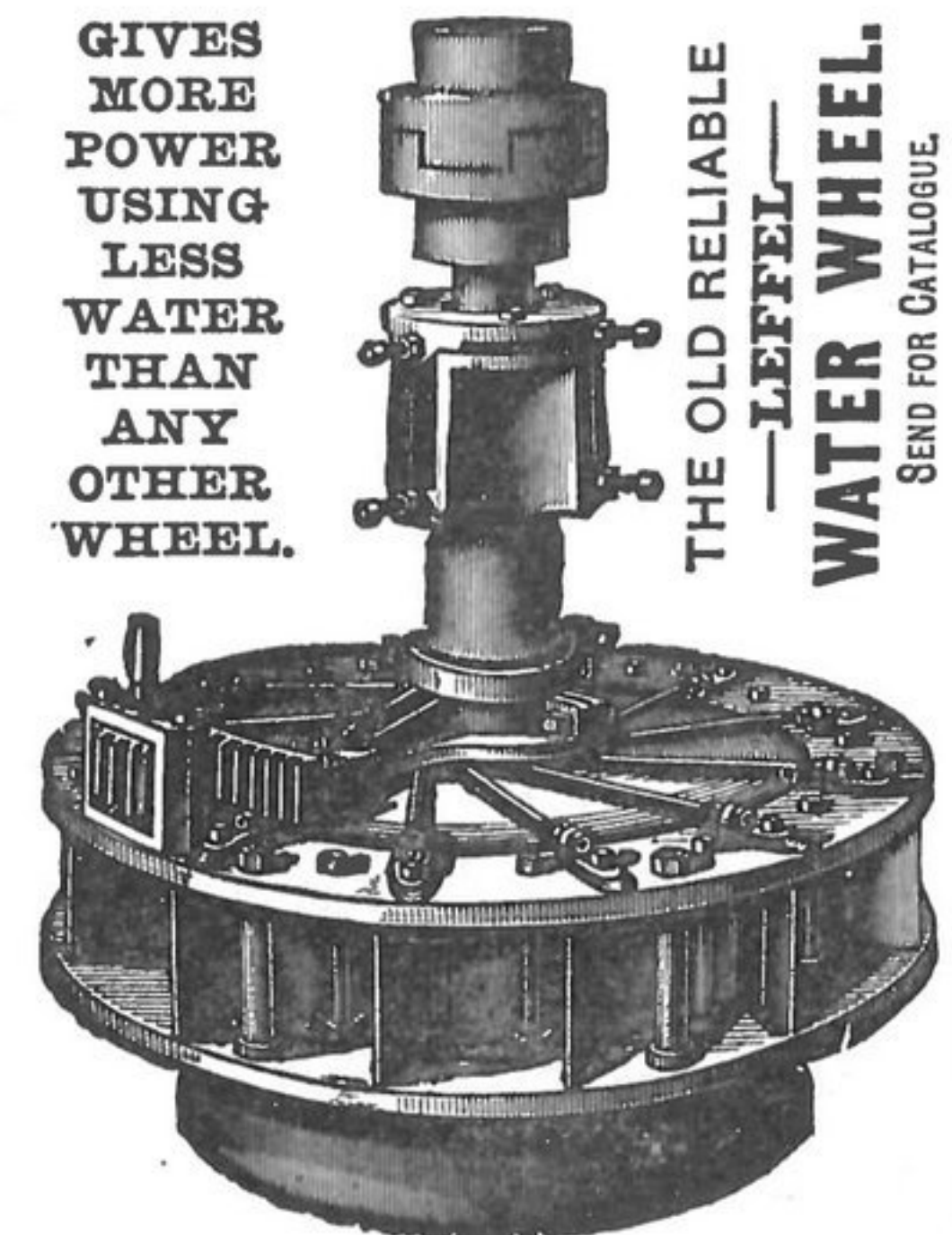
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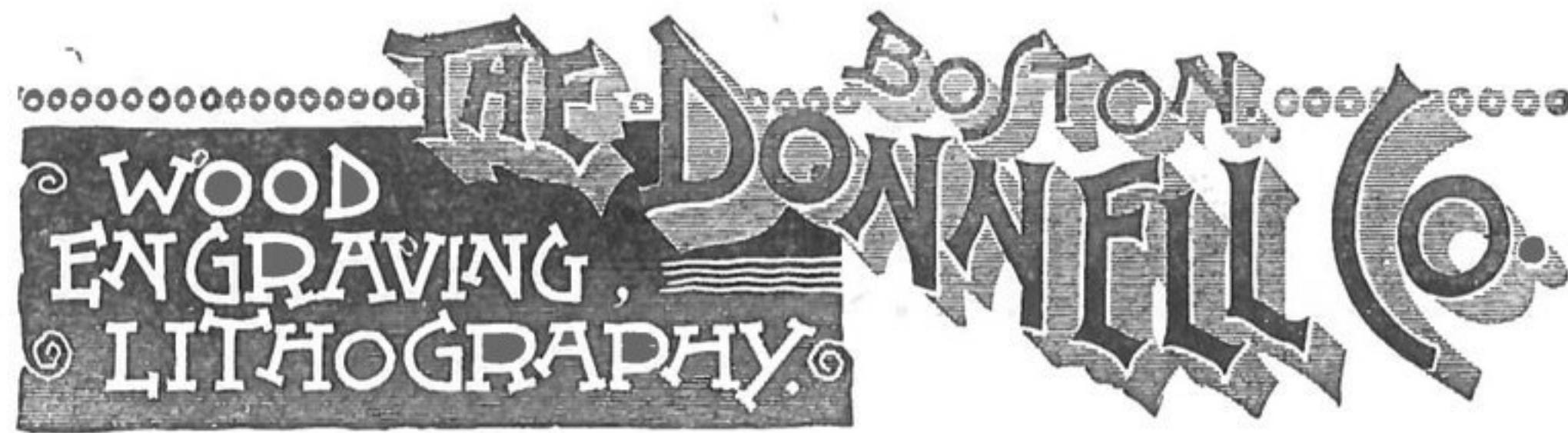
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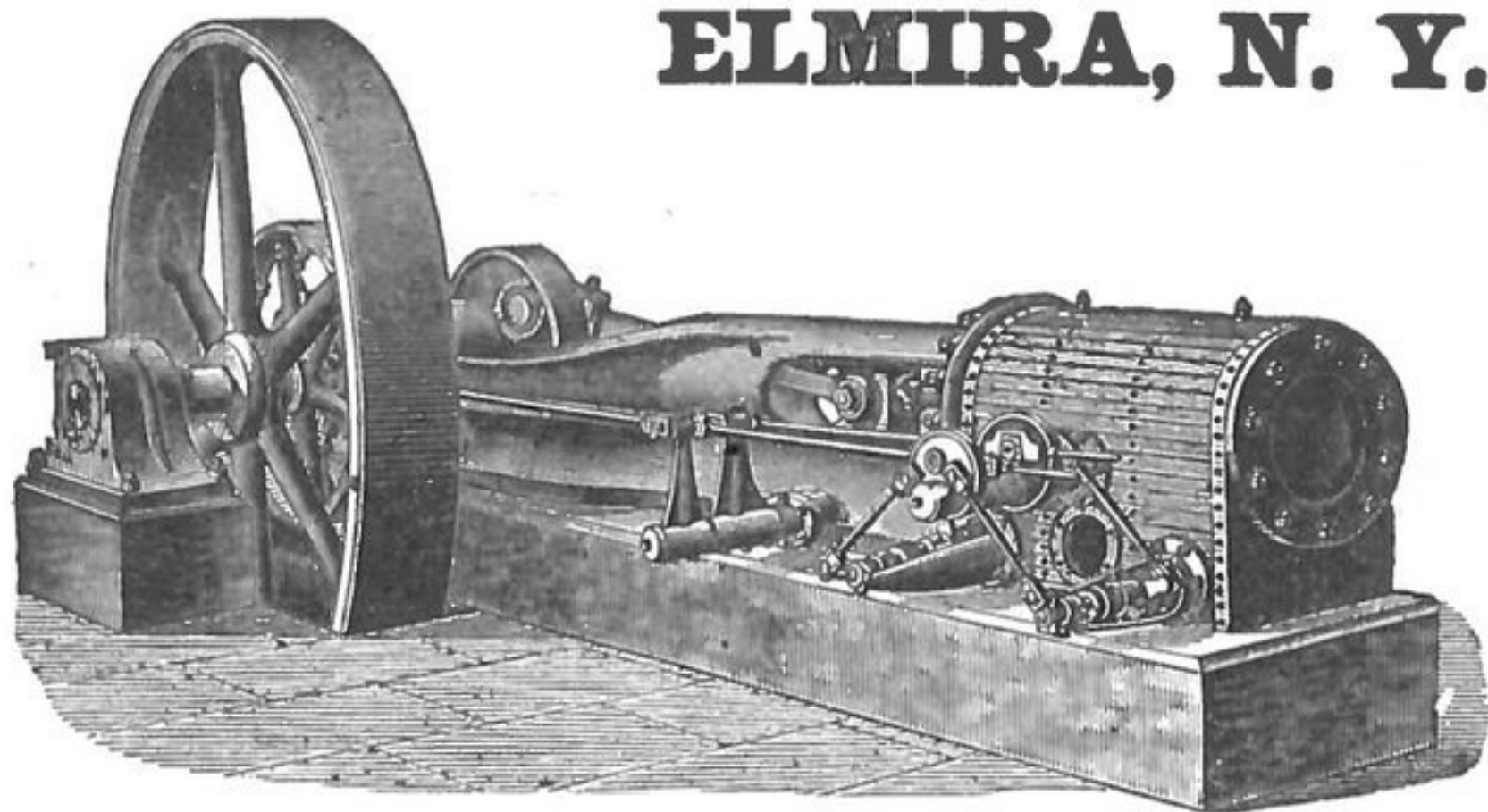


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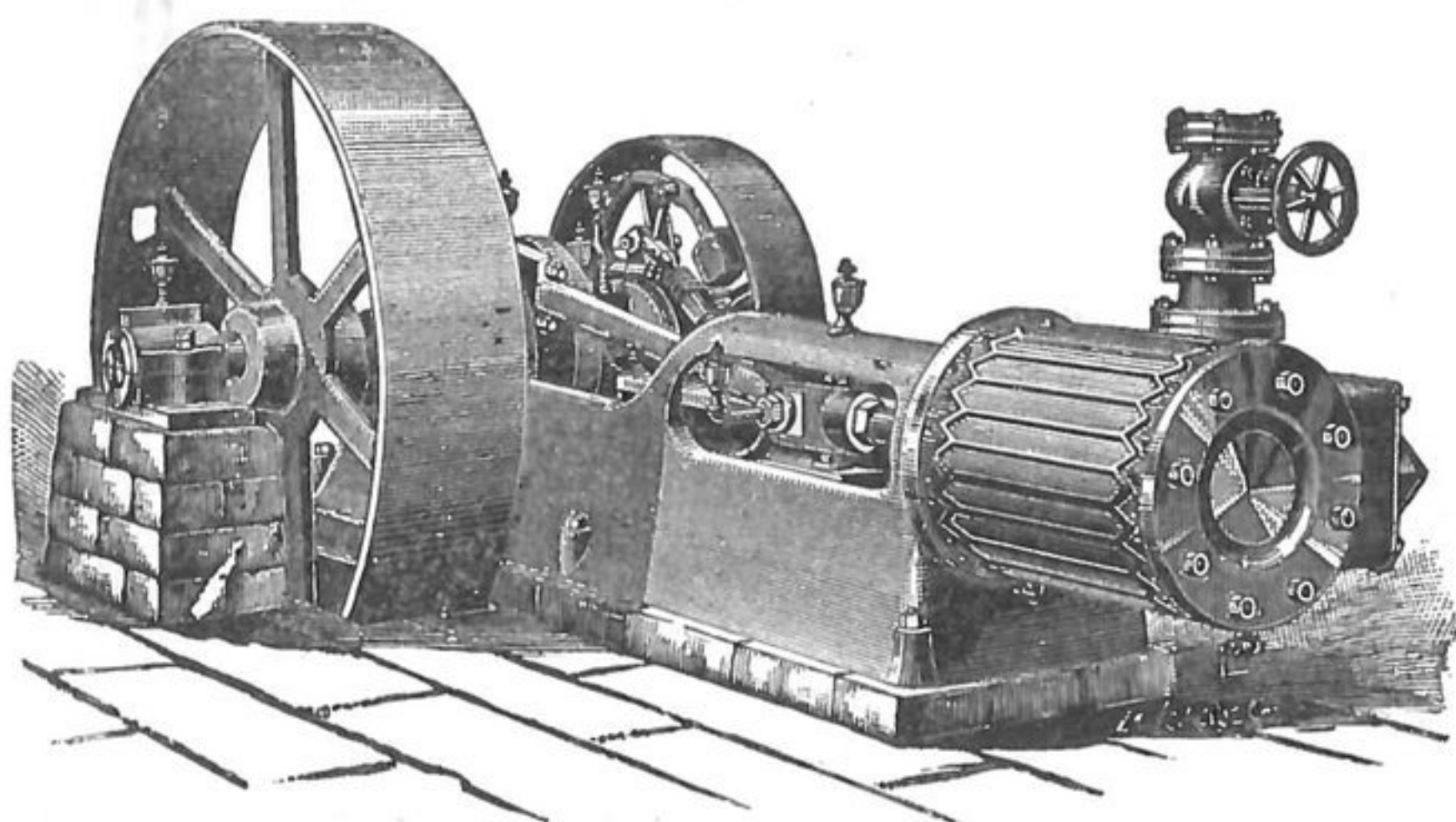
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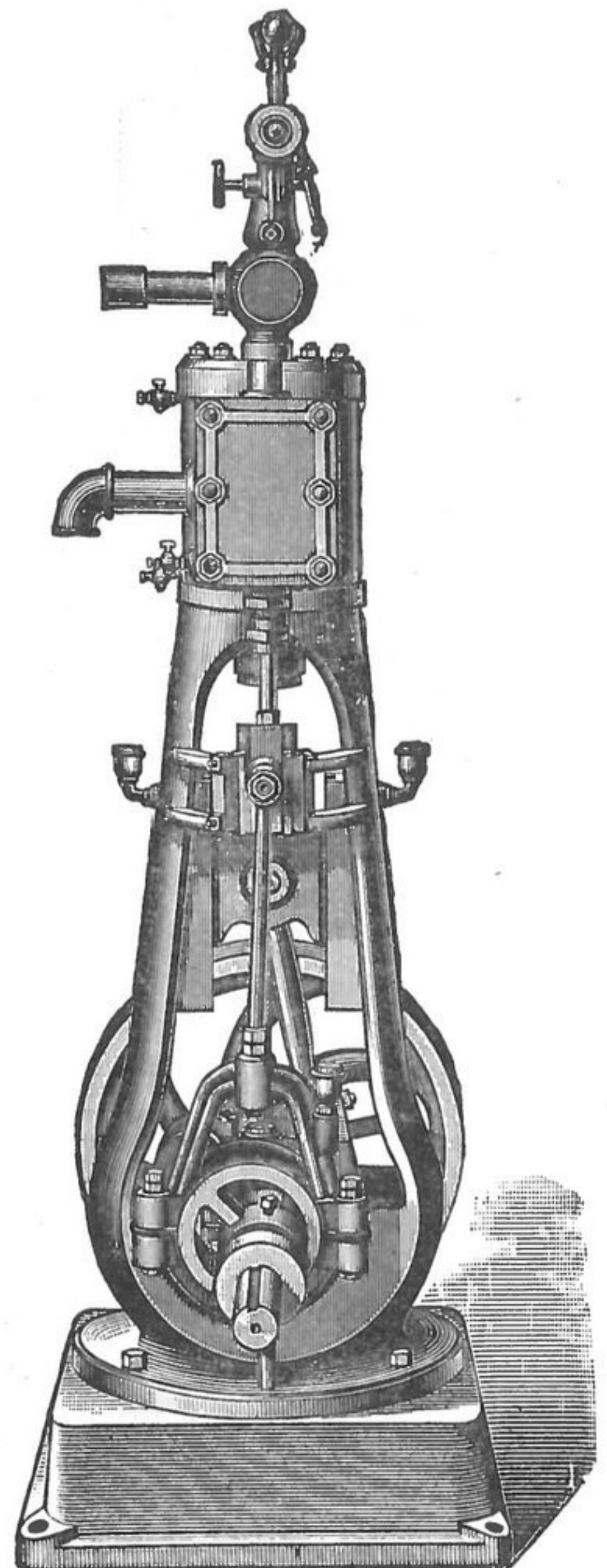
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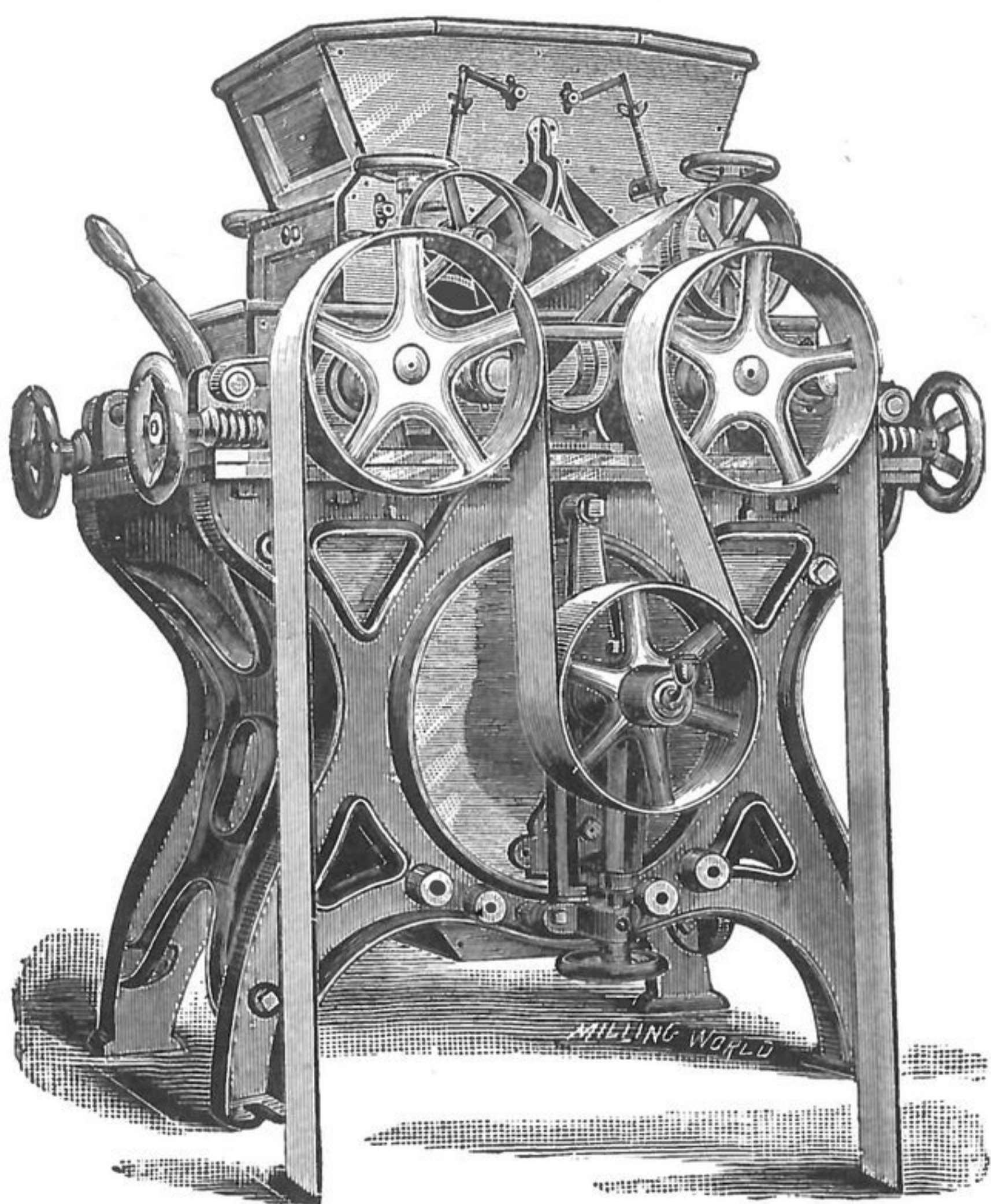


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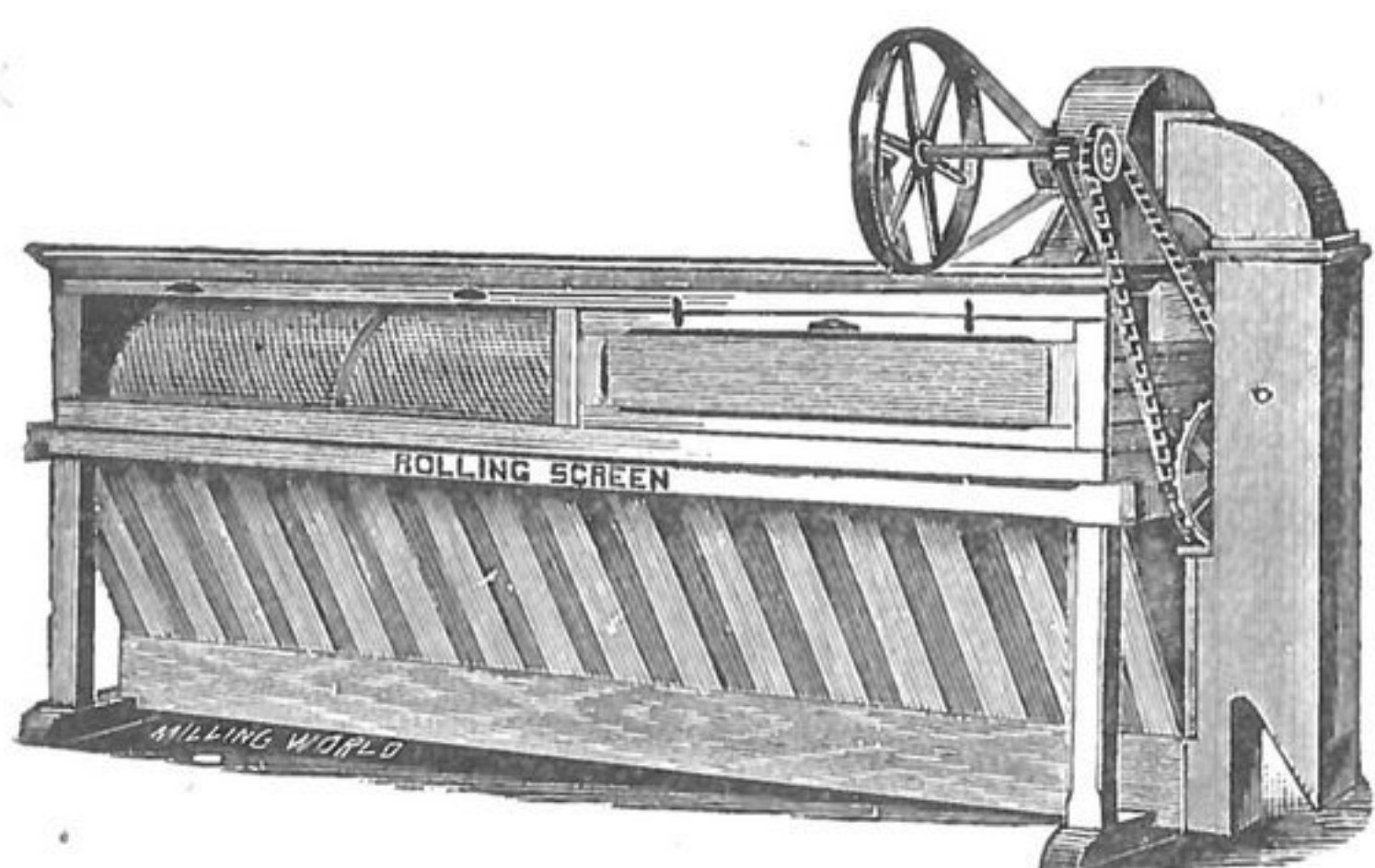
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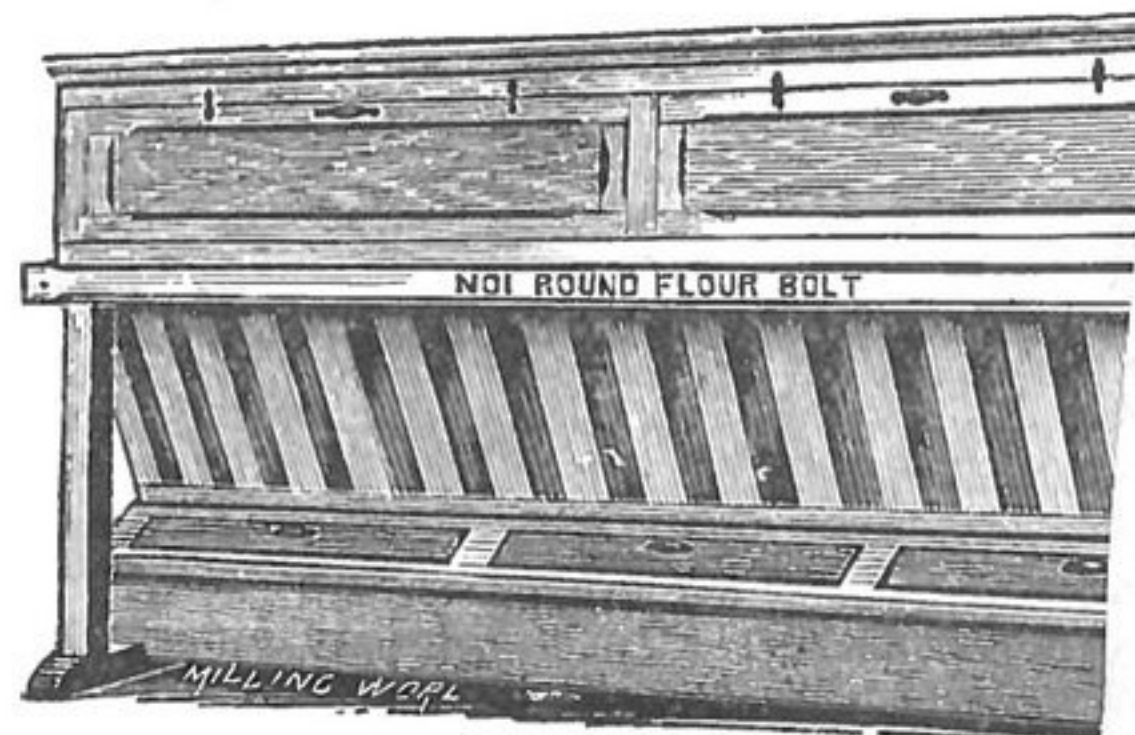
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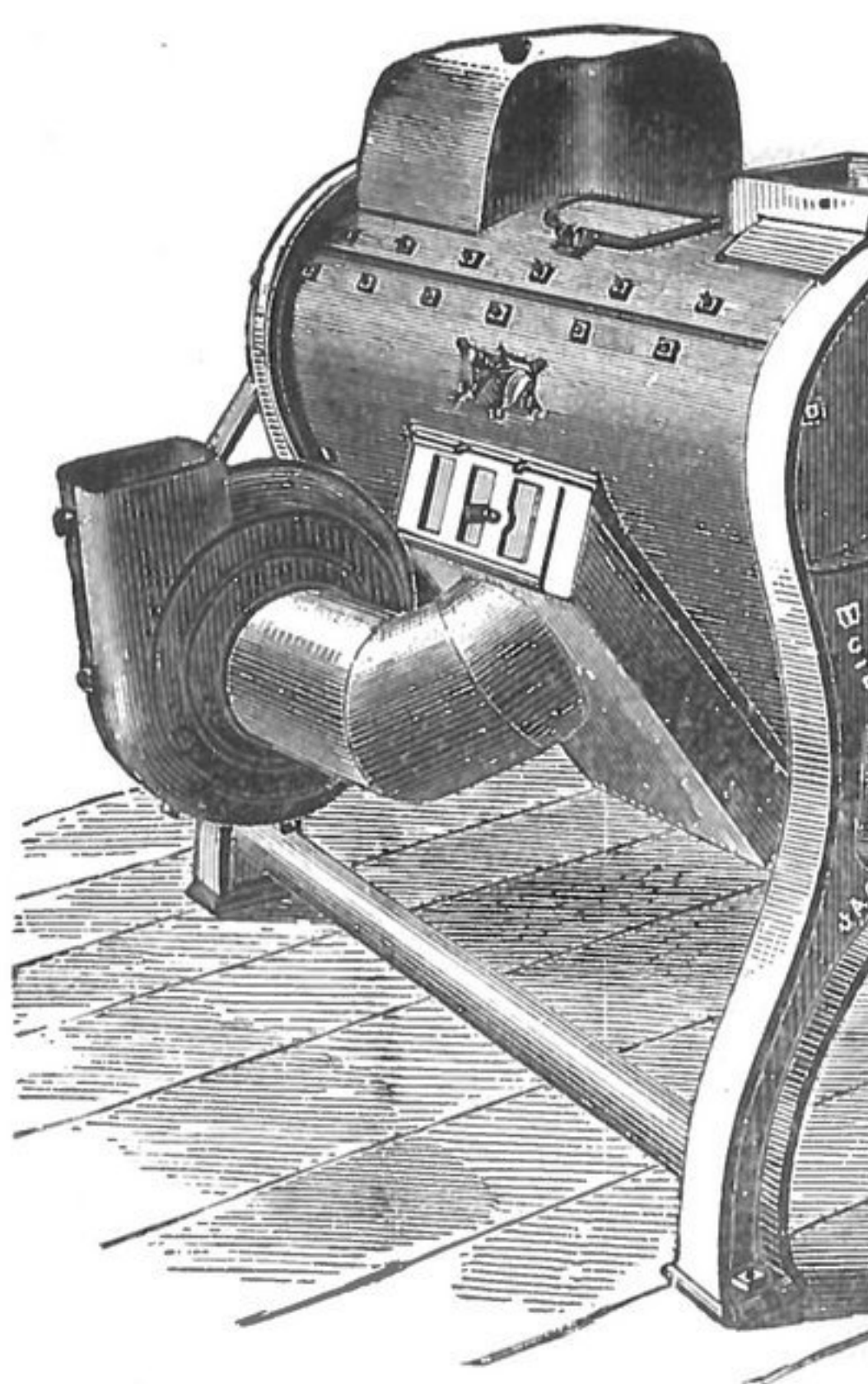


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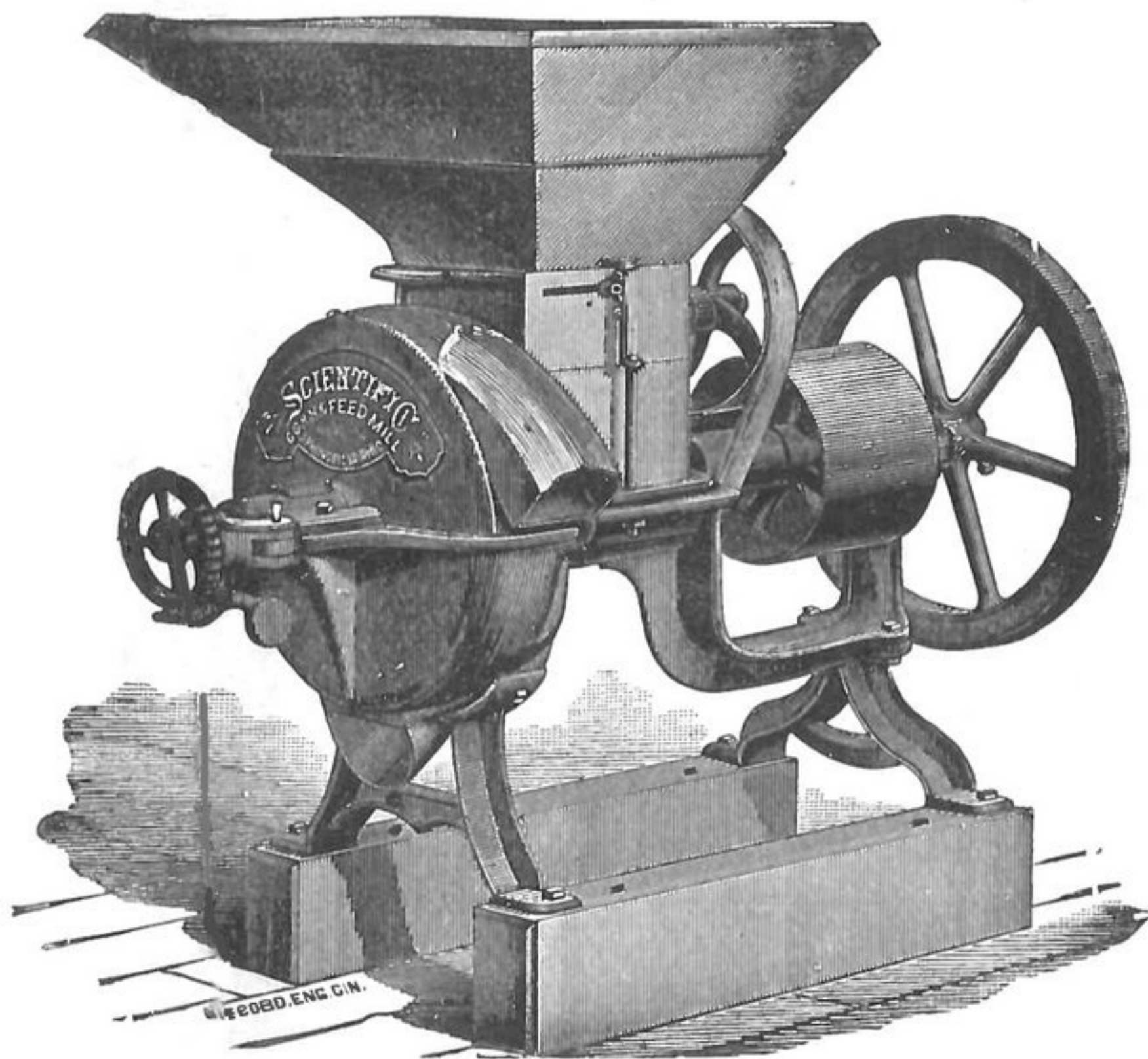
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